

# ST APPLICATIONS

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The Magazine for Users of Atari ST, STE, Falcon and TT Computers

Issue No. 28, April 1993

## THIS MONTH

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- \* HP Laserjet 4
- \* Imagecopy Colour
- \* Video Master
- \* Music Arrangers

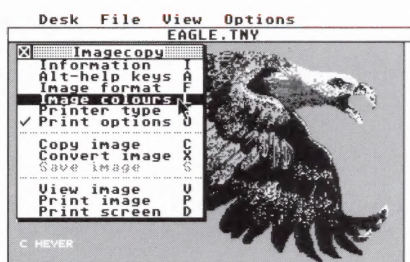
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- \* DTP on the ST
- \* Beginners' Forum
- \* Superbase Tutorial

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- \* CAD Column
- \* STicks and STones
- \* Desktop Discussions
- \* Programmers' Forum
- \* Going On-Line
- \* Forum
- \* Grafix Arts
- \* PD Update

## Imagecopy Colour



Peter Crush enthuses about the new colour version of Jeremy Hughes's Imagecopy. It supports the new DeskJet 550C printer and will also give colour prints from standard DeskJets and Bubblejets with the 'colour kits' that are available, as well as from colour matrix printers.

## Video Master

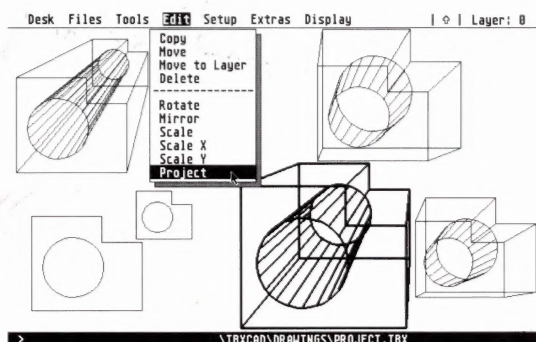
The latest release from Audio Visual Research is unique in that it is neither a sound sampler nor a video digitiser - it's both! Published by Microdeal and reviewed in this issue by Steve Delaney, Video Master is the first ST product in what will no doubt become the multi-media revolution.



Printed in the U.K.

## Hewlett Packard Laserjet 4

Hewlett Packard have just released a 600dpi laser printer that has been well received by the general computer press. Just how well it fits into the ST market is investigated inside by Peter Crush.



"Champagne CAD at a beer price" boasts the manual cover. Joe Connor is not so sure: more like refreshing sparkling wine, he concludes. Available from the ST Club for £49.

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# CREDITS

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## Contributions

The articles in *ST Applications* are written by users for users. Everyone reading this magazine will have something to contribute; even if you do not feel able to do a full-length review or article there is the Forum section for short hints, tips and questions. If you are interested in writing for *ST Applications* - regularly or irregularly - please write for a copy of our terms and conditions. We always do our best to reward quality work with appropriate remuneration.

## Atari News

As more and more companies see the Falcon, more games companies are inclined towards at least experimenting with it, Silmarils, Millenium and Digital Integration being some of the names thrown around. Tornado, Digital Integration's flight simulation/combat follow-up to F-16, will be out in March on the PC, some weeks later on the ST and Amoeba, and then it will be transformed for the Falcon and A1200. As things are, Digital Integration are talking of these machines as the next generation, since now it's getting increasingly difficult to convert games because the ST and current Amoeba are "so slow". Never thought I'd hear that said about them. They're very enthusiastic to find out what they can do with the Falcon's insides.

By February, Atari are expecting to have 10-12 games ready and available, and that's before the machine REALLY comes out. Apparently, it's not just the undoubtedly good noises that you can get out of it, but the way that True Colour moving images can be shown, though the exact meaning of "True Colour" varies depending on who you talk to. The games companies want to have a play with it, but because of the slow arrival, there's not been many machines to go around. Also, Atari UK have apparently been rather impressed with the stuff that's floating across the channel from France and may ask the UK houses to have a look at it first to show them what can be done.

Adverts for the Falcon will be appearing sometime soon, probably around launch time, but the Lynx may actually be seen on

TV before that as they try to make some ground against the Game Gear. (Yes, Atari do do adverts. Sometimes. What Nintendo laid out on adverts last year was apparently more than Atari turned over, so they don't want to get into a media war. They'd lose.) Surprisingly, the sales for Lynx and Game Gear (before Christmas) are around the same, with software at a similar level and a plug-in converter rumoured to be floating around so that Game Gear games can be played on the Lynx. Even Atari are prepared to admit that they made a bit of a boo-boo with the Lynx promotion, having *Batman Returns* released solely on their machine and bombarding the market with .. well, one advert that you could go to see every time you went to watch the film at the cinema. Now they'll be going for some consumer magazine promotions and the link up with Kellogg's Golden Crackles which will cost them around £250,000. Late, but maybe not too late.

Owing in large part to Atari's approach to marketing, '92 was "a write off". Since they at least admit to this and seem more capable of talking to people, the problems may be cleared up in '93 (eternal optimism). During this time, they will be examining the progress of the console market, seeing whether it's peaked or is still growing, and may start serious work on their own console project, currently called "Justin" because "the console market may be dead, but just in case". I loved it.

Piper

## Falcon

The Falcon's official release date at this moment (15th February) is March 1st. It may not appear with a new case since Atari UK have not yet seen one themselves. It also seems that the price reduction was wishful thinking with the entry level machine likely to stay at £499, a blow offset by the fact that the A1200 pack is currently retailing at the same price. The Falcon will come complete with some software, including a sound processor and a moving picture display.

Some games may also be included, but Atari UK are trying to make sure that the ones provided actually make use of the Falcon's capabilities rather than make do with what has been handed to them by Atari USA, which only shows what could be expected from the ST.

The price does not include an adaptor which plugs into the monitor output and allows you to connect Atari or VGA monitors, depending on which adaptor you use.

Initial release is likely to be limited and focus on the Falcon's sonic abilities, so don't expect it to turn up in Smith's or Menzies yet.

At the CeBit show, more information is expected on the Falcon range. As was initially stated, the Falcon isn't another version of the ST, but rather a new range which can take advantage of a large amount of the ST's software (currently rated around 70% of mono software, somewhere over 50% of colour/games software). There may also be news on the rumoured Jaguar, Panther, Hawk, Turtle or Cockroach (take your pick) to let us know for certain if Atari are returning to the console market.



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## Disk Mags

These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. The next Disk Mag, DMG.34, will be dispatched a few days after this issue is sent out.

## Bits and Bobs

### STraight FAX news

STraight FAX is about to undergo a major upgrade. Among the new features are multi-tos compatibility and a fax receive desk accessory. The program is no longer marketed by Joppa in the states but distribution in the UK remains with HCS. This is contrary to rumours to the effect that STraight FAX has been discontinued. The author of the program provides support via Compuserve 73047, 2565.

### Notator News

Notator and Creator are now sold by Emagic, a new company formed by the authors of Notator. UK distributor remains Sound Technology. The programs now have a new package and support will be continued. There are no plans to provide Falcon compatibility. Owners of the

Falcon will have to buy Notator Logic when it becomes available later this year.

### Tele Office

A new English manual is now available for TeleOffice. The program costs £69.95 or £39.95 when purchased with a MODEM from System Solutions. Tel: 081 693 3855.

### Cubase News

The long awaited Studio module for Cubase will be available shortly. The module provides basic library and sound editing facilities from within a Cubase window. Another Steinberg product is Xplain which gives on-line help in hyper-text mode. The text covers many aspects of Cubase and MIDI in general. Watch this space for more info.

Ofir Gal

## Falcon Talk

### Falcon Games?

A number of major software houses are currently developing games for the Falcon. This is not a rumour or a maybe. I've seen some of the games. They're real. They exist. They're good. I can't tell you about them yet. Atari and the companies have signed non-disclosure agreements (for some reason). One much respected house has signed an agreement saying that it will bring its new (and much lauded) game out on the Falcon in an enhanced form, not just as a straight translation. Be of good heart, things *are* coming.

### Photo CD

The Falcon can access and display Photo CD files. Kodak, the company behind Photo CD, saw the display recently and are impressed with the "potential" of the system. In other words, it's not quite there yet, but it's a lot closer than they were expecting. And this was on first meeting. Kodak had been asking what video cards had been plugged in; it came as a surprise to them that this was the basic machine.

### Emulators

The newest of the Apple emulators from Dave Small should see the light of day by the CeBit show. It's designed for the Fal-

con, and is rumoured to be able to emulate a Quadra, but at a higher speed than the Quadra can emulate itself. Apparently, the Apple system software now has bits in it saying "Bet you can't get around this, Small"; so, of course, he has.

There will also be an emulator on display at the 7th International Computer Show, the 286 emulator, which I hope will be only the first in a series.

### CD Movies

The prospect of getting movies on CD took a large step forward recently with Nimbus announcing their development of a video CD which will hold up to 2 hours 15 minutes of video information on a normal 12 centimetre disc, enough for most feature films and the associated stereo soundtrack. The development involves the work of a California company, but the product, which is due out within a year, is British, something quite unusual in these days. The impact on us is that Atari are waiting for a video standard to be accepted by the masses (us) so that it can tweak the Falcon to be able to handle it with ease, allowing it access to what will be a large volume of graphic material which can be used on all formats.

Piper



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## Birds in Flight

I've had many promises about actually receiving a Falcon. Yesterday, I actually got as far as seeing one. I went down to Atari and had the beast demonstrated to me. It was an experience. Some good, some bad, some jaw-dropping-on-the-floor amazing. Let me tell you about it ...

I turned up and was greeted by Darryl Still, who carried me up the stairs (what a nice man) to a room where Alistair Bodin was setting up the Falcon for demonstration. Here's where the first bad bits come. The demo was for a startling new machine with better graphics and immensely superior sound to the ST, so they were going to show this all off by using the standard ST colour monitor. Going into reverse is not a great way of advancing. I hope they'll re-arrange the set up for the 7th International Computer Show at the end of the week.

### *Like to see some photographs, nudge, nudge?*

It surprised me that the first thing that was set up was a Photo CD show. I'd looked at the specs for the Falcon and had been impressed with the sound, but thought the graphics were a bit of a cop out. The highest resolution was just a little more than ST high resolution, which as we all know is excellent for the old style word processing, but less impressive when you move on to graphics. The pictures are okay, but a diagonal line is still quite noticeable as a series of pixels. At least now there were going to be colours. I was going along with the idea of tolerating the graphics as reasonable, but being blown away by the sound.

The previous Friday, Kodak had turned up for the first time to see what the Falcon was capable of as far as handling Photo CD was concerned. I'd been in touch with Kodak shortly afterwards to hear what they had to say about it, and wasn't greatly encouraged by their reaction that the system had "potential". Being the cynic that I am, I'd thought that they'd not been impressed and were trying to be nice. It didn't enhance my

anticipation.

It took a while to get it set up, as the CD machine that was being used was apparently on loan and they'd not had much chance to get used to it. Also, Kodak had left a Photo CD behind, but according to Darryl they'd taken the best one. Again I thought that excuses were being offered for what was going to be a disappointing show. Eventually the program was up and running and I was asked to pick a picture so that I wouldn't think they were only showing me the best. I did. It loaded. Finally, the picture was on screen.

I take it all back. The graphics on the Falcon are far superior to anything seen before at this end of the market. There was a picture of a woman standing in front of a monitor which had a Photo CD picture of parrots on it. It looked like a video when you have it on pause. Examining it closely, I could probably have picked out some subtle faults, but generally when working with my computer, I don't have my nose up against the screen. Now I could see what Kodak meant: it would benefit from refining, and Kodak only want the best, so they're not going to go over the top. One of the major problems is that the Falcon stays with its old refresh rate (50Hz for colour) and has introduced interlacing for higher colour resolutions. Interlacing is where, for each time you refresh the screen, you only do every other line (1,3,5 ... the first time, 2,4,6 ... the second). This means that any line is only at a 25Hz refresh rate, far below what is acceptable by law for continued long term use in the workplace. When the desktop was on view, this was noticeable as a flicker at certain places of high colour contrast. When the Photo CD picture was on view, I couldn't see any flicker. We can only hope the interlacing will be addressed as an upgrade, or at least will be eliminated in the new Falcon 040. About which, I hasten to add, I know nothing except that it's there, waiting to happen.

Photo CD on the Falcon is, surpris-

ingly, going to be a big draw. All that will be needed is the right software to be able to manipulate parts of a picture and a hard disc to save the finished file and you'll be able to have your granny with Michele Pfeiffer's body sitting on John Major's lap in the Commons. Okay, maybe granny doesn't deserve to have John Major inflicted on her, but it gives an idea of the possibilities.

We then flicked through various other pictures, all of them of similarly high quality with diagonals, circles, ellipses and anything else you might see in real life. These were, after all, photos. And they looked like photos. This was something I'd not been expecting. I was told that Kodak had shown a file where a woman was on holiday to Australia and had been taking photos of the places she visited. This was shown sequentially, with the addition of a soundtrack where the woman was narrating all the interesting things that had happened whilst she was in these places, all of it held on the CD file. This was one that Kodak had taken with them, a great shame. They'd also taken the one that had a picture of the Chippendales on it, which Alistair had commented on as being particularly good. Everyone had moved away from him after that. (Yawn...)

When Atari had done a tour of the various TV shows, they'd been approached by the people on the shows who'd said that they'd seen the A1200 and knew that the graphics on the Falcon weren't as good, and would Atari like to just do it with sound? Alistair had then clicked a button to show the photo quality and everyone was left picking up their teeth as their mouths fell heavily open.

### *Painting by numbers*

We moved on to a Tru Paint demo, showing how the Falcon coped with painting. It was nice, far superior to anything the ST could cope with, but having just seen the Photo CD, it didn't have the same impact. There was a screen of birds, all showing the full range of colours to be expected from their plumage, but with the pictures shown the limitations of the resolution could be seen, the circles of their eyes being a little pixelated, but that was just one picture. Hav-

ing seen what the Falcon can do, I was sure it could be improved with some re-touching.

### *Cartoon Time*

Now we started into Moving Pictures, which should be included with the Falcon. Those of you who saw Bad Influence will already have seen some of this stuff. There's a bird walking along beside a fence. A fluffy ball bounces straight between its legs and its head swivels around on its long neck to follow its progress. Graphically, quite nice, the animation is pretty convincing. And there's a sampled music soundtrack. This is the point where I thought I'd start to be impressed. I sort of was. But the sound was being sent out through the monitor, and the monitor isn't designed to be a hi-fi accessory. It sounded like it really should be good. Again, there was the "potential" to be excellent, but it wasn't presented to its best advantage. Were good, tho'. And then there were more of the same, different animations with different soundtracks, including the other Bad Influence demo of a mouse jumping in the air with its eyes bugging out screaming a James Brown scream. The Falcon can even run different sessions of the moving pictures, so you can have a rocking horse and a dancing bird running in different windows at the same time, though with more than about three, things do start to slow down a little, and it can't cope with the differing soundtracks simultaneously, instead clicking between one and the next. The most impressive sound was probably the INXS sample, which I know reasonably well on a reasonable hi-fi. It sounded just like it should do when played through someone's portable, battery-operated tape deck.

### *Alistair and Mike: The True Story*

Further onwards. Now concentrating on the sound, a stereo mike was plugged in and Alistair set it up to record. He talked into each side of the mike, and into the centre. Then he played it back. The sound through the speakers was exactly the same as it had been when he recorded it. Not bad. Then he played with the effects. He shifted the tone so it sounded like he'd been doing some heavy breathing from



a helium filled balloon, then pushed it down so he was doing Marvin the paranoid android impersonations, added some echo, tried a cyborg effect, made it sound like he was in Wembley Stadium. And this was all live action, not just something that was done to the sample. This is just the first stage of software for the Falcon, like First Word was for the ST: it was good for its time, but was soon outstripped by other software houses and by First Word Plus. This can do things that you'd need to buy a sampler and an effects board for, as well as being able to do masters at higher than CD quality (if you have enough hard disc space), all for a reasonable price. If I'd just heard it through some hi-fi I could give you a real idea of what it's capable of. As it is, I'll just have to trust to instinct and say that the Falcon will be able to handle just about anything you might need as an add on in a studio. If you're musically minded, head out on March 1st, the official release date, and see if your local music shop has one, and listen to what it can do. Paying out the £499 (the price which Atari UK think it will be going for on release, since the plummeting pound has made the £399 release price unreasonable) could save you a fortune in extras.

### **Mathematically minded**

Alistair decided we'd had enough of the sound for the moment, so he loaded up a picture of a landscape which was, well, reasonable, but obviously computer generated. "What do you think?" he asked. "Colourful" I said, trying not to be too disappointed. "Fair enough. How about rotation speed?" He moved the mouse across the table, and the landscape revolved around a central point. A full 360 degree rotation, completely smooth. Impressive, something you could be proud of a computer doing. "How about flying speed?" The viewpoint started to change, you were in something flying across the landscape, everything in perspective, able to change direction to fly in a different direction. Very impressive, though the graphics still weren't top notch. Then I got the final bit. The whole landscape was being calculated from algorithms of polygons at the time that you were flying over it. This wasn't

being done by a tolerable artist, this was being done by a guy with a degree in maths. And the Falcon was fast enough to do all the calculating and displaying without once letting you know that its mind was otherwise occupied.

### **Musical Chairmen**

Back to music, and a program which had four sampled tracks on it of guitar, bass and drums (apparently performed by one of the chiefs of staff in Germany, something Alistair and Darryl had trouble believing - he's pretty serious at work). These were controlled on screen with sliders, so the instruments could be mixed in different ways. The Falcon was acting as a mixing desk, managing to cope with four different sample tracks. And this is stage 1 software. If it can cope with this now, it can probably be persuaded to cope with up to eight tracks in the future, and will allow you to mix two tracks onto one, add effects, store the track with its current mix and still maintain the super CD quality (I hope - if only there'd been a hi-fi ...) of the original. If the software does arrive, it could turn out to be cheaper to do home recording on a Falcon than on a four-track cassette, and it'd be better, no tape hiss or degradation. Just as the ST made a big impression in the recording of keyboards, the Falcon could make a similar impression in recording anything.

### **Sound and Vision**

Next, a Tina Turner sample which was backed by a stream of digitised photos of (American) footballers and Tina herself being manipulated in various ways, shown small and whizzing around the screen or full size. The Falcon will not, unfortunately, make it into video studios yet (maybe the 040), but it's getting there. The stills were obviously digitised, but not annoyingly so, and Atari are still waiting for a video standard to be adopted by the industry before they throw their lot in behind it. Perhaps with the recent Nimbus announcement of storing 2 hours 15 minutes of film and soundtrack on a standard size CD, that standard will be brought forward.

### **Only playing games**

And there were the games. I've heard a lot about all the companies

that are involved with developing games for the Falcon, and have been disappointed by the response of the companies mentioned, who've nearly all said "later". This time, I was able to see that the companies really are developing their games. I've seen some very famous games on the Falcon screen, at least in demo version. And there's a very well known company who are currently releasing their first game in some time to rave reviews who have signed an agreement to not just port their game over to the Falcon, but have promised that they will be upgrading it to take advantage of the Falcon's capabilities. A lot of the other companies have also signed agreements to state that they will do some developing, but for some reason part of the agreement is that they won't talk to anyone about it, and Atari won't talk to anyone about it. Sounds dumb, and it's put me in the position where all I can say about the demos I've seen is that there are some very well known games, RPGs, racing simulators, platform-type that are being developed for the Falcon, despite the recent press rumours that no-one was going to go near the machine until it had sold about 50,000 units. Apparently, there has been a lot of change since Christmas, with companies getting a little less confident of the console market. If they produce something like Sonic, then they'll sell a huge amount. If their product isn't quite that good/well publicised/fashionable then there's little chance of casual buyers picking it up to see what it's like: £40 is quite a sum for a casual purchase.

### **Possible Futures**

I was told about some things to come, such as the Apple emulator for the Falcon as constructed by the brilliant Dave Small, which can run things faster than Apple's own Quadra can (believe it when I see it, but sounds good). I was specifically not told about future Atari products. They can't say anything about the Falcon 040 or the console games machine. Nothing at all. I asked them on a hypothetical basis when they would be likely to talk about it if these machines did exist. Hypothetically, they'd be making some announcements at the CeBit show when they do the official Fal-

con launch.

### **The Heart of the Matter**

I was shown the inside of the machine. The memory will not be in standard SIMM format - you'll have to buy upgrades from Atari, which the upper levels have said is for greater reliability since SIMMs have a habit of breaking. I wasn't convinced. It wasn't said with much conviction either.

For some understanding of how they were able to get the DSP chip into such a (relatively) cheap machine, the number of Motorola chips floating around on the board was pointed out. Most of the chips are Motorola ones. Maybe there's a block buying deal.

### **Did you have a good day, dear?**

Basically, I had a good afternoon. I'd been expecting to be disappointed. I'd not been in a good mood with Atari since I've been promised a machine to review on numerous occasions and now I'm told that I'm unlikely to get one until my chequebook writes a note for it. I was not going to be swept away by loyalty, devotion or Atariphilia. And yet, it had been good. The software that's already there is enough to make it a reasonably good buy, the future of the machine looks like it will again take a leading position in the music market and may even have a surprising impact in the Photo CD area. There are faults: get rid of the interlacing, upgrade the refresh frequency, bring out a monitor that will support all the video modes, upgrade the desktop a bit more (it's got some 3D effects on the windows, it has multi-colour icons, but it's looking a bit too much like the ST version to be impressive), change back to SIMMs, change the monitor output so that something can plug into it other than an adaptor, upgrade the mouse, change the case (they've still not seen the new case). But these are mainly minor faults. If they'd had any of the basic 1 Meg machines, I might well have parted with a cheque.

I think I'll go back to the Kodak approach: this machine really does have potential.

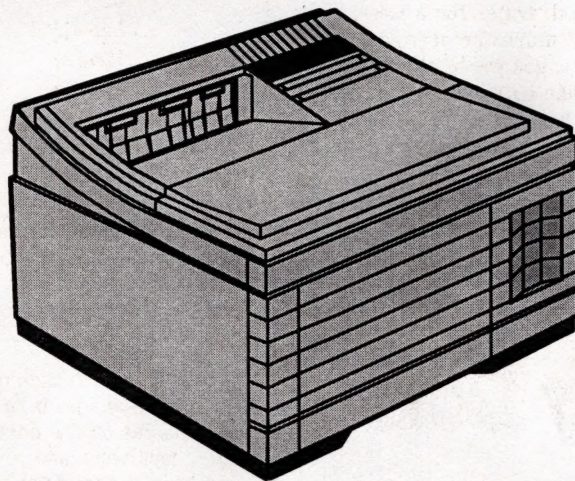
And this is just the first in the Falcon family.



# HP Laserjet 4 Printer

Review by Peter Crush

*A new printer from Hewlett Packard is always big news, and although they design their equipment primarily for the PC market, HP printers always seem to be perfect for ST use too. Their latest laserprinter has already received plaudits from the general computer press, but how does it measure up for the ST market? Peter Crush investigates.*



## Fonts on a large scale

The HP4 has 45 scaleable typefaces built into its memory, giving an excellent range of 35 Intellifont and 10 TrueType typefaces. These are printable at any height between a minuscule 0.25 and an imposing 999.75 points, and at various pitches. As all good students of typography know, there are 72 points to the inch, so the HP4 will satisfy any reasonable demand you could make of it, unless you want to print words over twelve inches high! The advantage of having all these fonts and sizes built into the printer is that by using even the simplest WP you can produce superb (and almost instant) output. If you want to make a quick poster, overhead transparency or handbill which contains just text, you don't need to use a DTP program, you can print it instantly from even a text editor! The quality of output obtained is virtually that of real typesetting, and the HP4 certainly

sets new standards of print quality for such a comparatively modestly priced home or office machine. As the scalable fonts held in the printer's ROM are of the

"vector" variety rather than bit-mapped, they look good no matter how large you print them. In fact the fonts are particularly smooth, elegant and well designed. You can select the font and size required from the printer's control panel, which comprises a set of clearly labelled buttons and a green fluorescent illuminated display screen on the top panel.

## Learner drivers

To get the best control from within your wordprocessing software you require a specific printer driver. Therein lies a slight problem at the moment: the HP4 is so new that hardly any drivers for ST programs have been completed yet! At present drivers for Calligrapher 3 and That's Write 2 exist, and these and others should provide a superb means of obtaining impressive output. Luckily the HP4 responds to "ordinary" 300 dpi commands as issued by any existing LaserJet printer driver. So as long as your software has a LaserJet driver you will get decent output, but not necessarily be able to extract the full fonts or performance the HP4 is capable of. To print a sixty line page of text, the HP4 took just 30 seconds, pretty fast by any standards. Printing is initially in the default Courier typeface, but selecting alternative typefaces results in

## How does it all work?

The LaserJet 4's printer engine was specially designed to handle 600 dpi output, and can automatically translate 300 dpi commands into 600 dpi prints without any special printer driver or any work by the user. The "Microfine" toner powder used in the laser printer is specially formulated and has 20 to 30 percent smaller particles than that used in typical laser printers. These features, to quote HP "combine to give more precise dot placement and smaller dots" resulting in better looking printed output. Four times the amount of image data uses much more memory and should mean longer transmission and processing time, but HP have used data compression and fast processing RISC chips to maintain the customary speed we all want. In fact the HP4 can print eight pages per minute, pretty fast considering that most lasers work at four or six pages per minute. These times are for the continuous printing of the same page, but the production of the first page takes longer depending on its complexity. The HP PCL5 printer language used in the model 3 and 3P has been optimised for faster graphics in the new HP4, and it supports an optional PostScript Level 2 upgrade cartridge which offers a claimed faster PostScript printing too.

There's no doubt about it, when you contemplate laser printers you probably think of Hewlett Packard first. HP set the standard for lasers with their LaserJet 2 and LaserJet 3 series of printers, and other manufacturers have copied their every move. For example, virtually all other makes of laserprinters boast HP emulation, and when HP first introduced Resolution Enhancement Technology, their competitors were very quick to introduce their own cloned versions of it. So what would you do next, if you were HP?

To maintain their leading position, Hewlett Packard have recently announced their latest model, the LaserJet 4, and it breaks new ground in a number of ways. The LaserJet 4 is a replacement for the popular LaserJet 3 model and differs from it in that it prints at a resolution of 600 dots per inch (dpi) instead of the normal 300 dpi. The text and graphics you see on laser-printed pages are made up in bitmap fashion of many tiny dots, usually in a 300 x 300 matrix for each square inch of the paper. This gives 90,000 separate dots per square inch with which to produce the required image, and although this resolution produces crisp, clear results, the output is not up to true typeset quality. The LaserJet 4, which uses a new kind of fine toner powder with smaller particles, enables 600 dpi resolution, giving 360,000 dots per square inch to play with. The HP4 printer even has resolution enhancement on top of this, thus realizing at least four times the resolution of a standard 300 dpi laserprinter. A "standard" laser will give 16 levels of greyscale, but the LaserJet 4 will provide 64 levels of grey, and this is almost good enough to allow photographic images to be printed. Although the new HP4 machine has a smaller footprint than the LaserJet 3 and is 6kgs lighter, it's rather bulkier than the very compact model 3P laserprinter. Mainly meant for office use, the HP4 is not too large for home use as well, given that you have a suitable desk and an understanding family.



much more attractive print-outs, although this is a matter of personal preference I suppose. The other 44 fonts provide you with an interesting and stylish collection to choose between, and they all take the same amount of time to output. So there is no penalty for selecting a fancy font, as you might encounter with graphically printed fonts in some WP or DTP software. Any of the inbuilt typefaces can be set to become the stored "default" when you power-up the printer, and you can set a default point size etc. in the same manner. To test the printer with graphics output, a PageStream 2 DTP page was output, and this took just under eight minutes to print out. This is fast compared to the usual time of anything between 12 and 24 minutes for similar documents printed on other laserprinters tested previously. But it's not as speedy as the blindingly fast output of a PostScript laser such as the Star Laser 4 with StarScript, or even Atari's own laser which uses the DMA port for speedy data transfer - these can print a DTP page in under a minute!

### Summary

#### Points for:

- ✓ very easy to use
- ✓ true 600dpi printing
- ✓ 45 inbuilt scalable typefaces
- ✓ excellent paper handling facilities

#### Points against:

- ✗ rather on the big side
- ✗ a bit expensive at present

The LaserJet 4 is clearly yet another winner from Hewlett Packard. RISC processors make it faster than most 300dpi laserprinters, all the clever workings are quite invisible to the user, and it's as easy to operate as any other machine. Printed results couldn't be much better for a laser, and when more printer drivers emerge, you will be able to obtain DTP-like output quality at great speed from just a WP. The HP4's 64 greyscale levels will enable photo-style images to be passably reproduced on a laserprinter, if your software can handle them.

There isn't really any serious competition yet, but 600dpi is bound to be the future new standard for lasers and no doubt the other manufacturers are already hard at work developing their own machines. Although the official price of the machine is high at present, it's already on sale for £1200 or less. If tradition is any guide, HP usually produce a "personal" version of their laserprinters, so we can hope that perhaps a smaller, cheaper model 4P will make an appearance eventually.

**Albertus Medium**

**Albertus Extra Bold**

**Arial**

**Arial Bold**

**Arial Italic**

**Arial Bold Italic**

**Times New**

**Times New Bold**

**Times New Italic**

#### △ Print Out

All printers offer a couple of fonts with which to print your text, but the HP4 goes the extra mile and has no fewer than 45 scalable typefaces built in! This absolutely super range of 35 Intellifont and 10 TrueType typefaces is good enough for anything you could foreseeably need, and might make your DTP program obsolete!

Product:.....Hewlett  
Packard  
Laser Jet 4  
Supplier:.....Hewlett  
Packard  
Tel:.....0344  
369369  
Price:.....£1937.58

## Imagecopy Colour

**Imagecopy**

Information I  
Alt-help keys A  
Image format F  
Image colours L  
Printer type T  
✓ Print options O

---

Copy image C  
Convert image X  
Save image S

---

View image V  
Print image P  
Print screen D

**IMAGE COLOURS**

Device ☐ Screen ☒ Printer

Brightness

Blueness

Contrast

☒ Monochrome  
☐ CMY colour  
☐ CMYK colour  
☐ CMY separation  
☐ CMYK separation

Epson 9-pin  
 Epson 24-pin  
 NEC 24-pin  
 Bubblejet IBM  
 Bubblejet LQ  
☒ HP Deskjet  
☐ HP Laserjet  
☐ Atari Laser

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Upgrade from Imagecopy -  
£4.95 and return master disk

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Nottingham  
NG1 1PS  
Phone (0602) 410241

The latest version of Imagecopy allows you to print colour images on a dot-matrix or inkjet printer. Colour images can be printed in any of the standard printer resolutions, and colour quality can be adjusted to increase the brightness, blueness and contrast of an image. If you don't have a colour printer, Imagecopy can print colour separations which may be superimposed to produce a full-colour image. In addition, the colour facilities can be used to improve the print quality of colour images which are printed in black and white.

Resolution options have been extended to offer an extra resolution for 9-pin printers (72 dpi), and another extra resolution for 24-pin and LQ bubblejet printers (60 dpi). The Laserjet slot contains two extra resolutions (200 and 600 dpi). These should work with the new HP Laserjet 4 printer.

The Colour menu offers five choices: Monochrome, CMY colour, CMYK colour, CMY separation, and CMYK separation. The colour separation modes can be used to print full colour images from a monochrome printer.

Because images normally print darker than they are displayed on screen, you can use the Imagecopy brightness setting to compensate for this. If your printer information specifies a 'gamma correction value' you can convert this to a brightness setting. The brightness setting can also be used to improve the way that colour images are printed or displayed on a monochrome printer or monitor.

A Blueness setting is available to compensate for the fact that colour printers sometimes print blue with a purple tinge. The Contrast setting increases the contrast between light and dark colours.



# Imagecopy Colour

## Blooming Good

With a *brilliance* of thought and a *glow* in his eye, *flushed* with the most *intense* ideas, *bright* creation *blossomed* even more *vividly* from the *radiant* TT in a *dark* corner of Jeremy's study. Or to put it another way, Imagecopy Colour is launched and Peter Crush overdoes the colourful connotations.

One of the first joys of using my ST was discovering a Desk Accessory called Snapshot, a Public Domain utility which enabled me to take a "grab" of whatever was displayed on the monitor screen and save it to disk as a picture file. To look at the resulting picture it was necessary to load the file into an Art program such as Degas. If you look through the PD catalogues you will see loads of similar DAs and programs which do more or less the same thing. So you might be forgiven for thinking this market was saturated with such applications. But not long ago a brand new commercial utility with picturesque capabilities was released. We are of course talking about the cleverly named Imagecopy, published by The ST Club, and first reviewed in ST Applications Issue 24.

This program deals very comprehensively with ST screen images, and was written by programmer Jeremy Hughes, responsible for the famous Fontkit series of software and needing no intro-

duction to ST Applications readers. If you want to "grab" images from your ST screen and save them to disk, load and display images from disk to screen, convert images from one file format into another, or print out images to your printer, Imagecopy does all these things from just one compact DA slot! But Jeremy is never one to rest on his laurels, and in the true tradition that a program is never finished, has improved on Imagecopy with his latest offering: Imagecopy Colour.

Imagecopy Colour combines all the useful features of the original version with some excellent new colour capabilities into a new Desk Accessory, and supplied on disk is also an alternative stand alone version. Like any DA, you have to place Imagecopy Colour onto your Boot Disk, and it will then be accessible from the ST's Desk Menu. Imagecopy Colour will work from inside almost any ST programs, even non-GEM ones, and taking a grab is done by simply pressing the ALT-HELP keys together.

### Picture this

Whilst many snapshot utilities enable you to copy the whole screen only, with Imagecopy Colour you can have either the whole of your screen grabbed, or rubber-band just the part you require. And you can fine adjust the size and position (using either the mouse or the cursor keys) of the section of screen you want before it is saved, giving very precise results. The section of screen is always rectangular though, the ability to "lasso" an irregularly shaped section of screen would be a nice feature if Jeremy needs any programming challenges. The file format for saving onto disk can be either any resolution of DEGAS (normal and compressed), or .IMG, but Imagecopy Colour loads and displays these formats plus TINY, NEOCHROME, and ART DIRECTOR, and Jeremy is working on adding other file formats to Imagecopy's armoury, including those to be used on the Falcon. The program runs in all screen resolutions, and works with any monitor,

including real large screens or virtual large screens! Another feature of interest lets you save an image as a .RSC resource file, handy for programmers or for importing stuff into Fontkit for editing. If you have a picture in one file format and want to change it into another, Imagecopy will do it for you, e.g. TINY to Degas, or NEOCHROME to .IMG. Up to four images can be on screen at once, and these are displayed in the standard GEM windows which are all movable, scrollable and re-sizable in the usual manner. If you are using a mono monitor and need to look at a colour picture Imagecopy Colour will dither the image and display it for you in "greyscale".

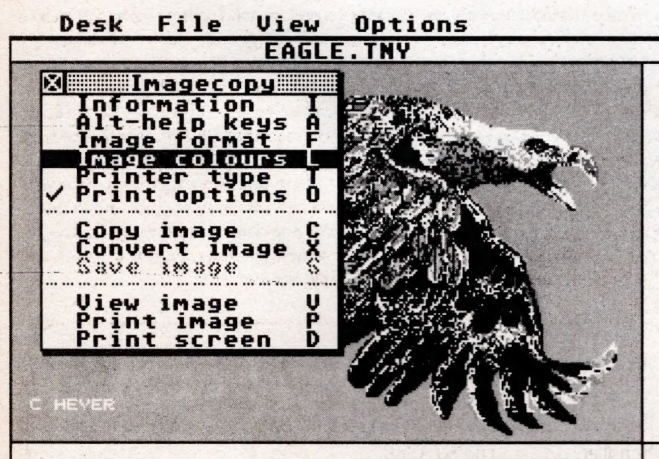
### Summary

#### Points For:

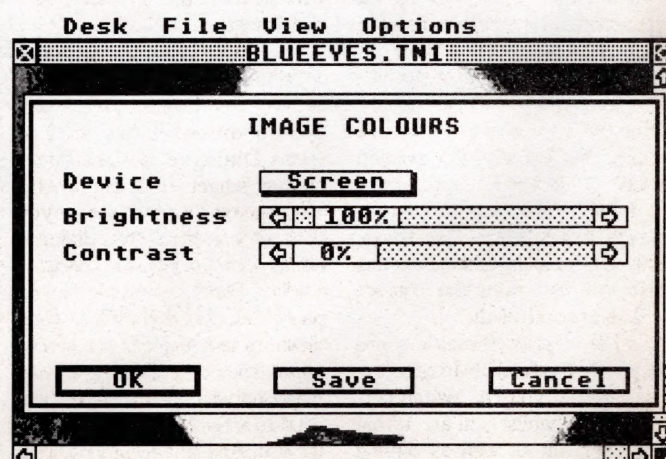
- ✓ Stable, well programmed utility
- ✓ All the image features you need in just one DA
- ✓ Modest upgrade price gets you the extra colour features

#### Points Against

- ✗ Who can think of anything to grumble about?



The important all-in feature in the Imagecopy Colour menu is this one, and clicking on it lets you establish completely different settings for both the screen and printer images.



For the screen image you may as well leave the defaults as they are shown here, although it's fun to experiment and you can toggle between the same pic loaded in at different settings.



## Colourful Additions

So what's the difference between Imagecopy Colour and the original Imagecopy? The colour version has a number of new features:

1) Colour printing on a colour printer is now possible. The program can produce instant full colour output from HP DeskJets 500C and 550C, 9 and 24 pin colour dot matrix printers, and via its "Separation" feature, colour prints from any other printer which allows you to change the normal black ribbon or cartridge for coloured ones. The previous version of Imagecopy could print out or display to screen good monochrome representations of colour pictures via its built-in "dithering" routines, but not handle real colour until now.

2) The "Colour Separations" feature enables multiple printing of the same sheet of paper with different colours one at a time to produce a full colour picture. This means that mono printers like the original DeskJet and the Canon Bubblejet can produce colour output if you get the "colour kits" available for them. This involves the multiple swapping of the standard black cartridge for successive ones containing different colour inks. Details of suppliers for these colour kits are included in the Imagecopy Colour manual.

3) Different colour settings for both screen and printer are now possible. This feature enables you to ensure that the final printed output on the page matches that which you see on the screen. The previewed screen images can often vary from the printed out image due to the differences in the colours of the inks, the type of paper you are using etc. Usually the printed result is darker in appearance and less bright than the screen image, but adjusting the Image Colours settings eliminates this and you can save the correct values as the Default.

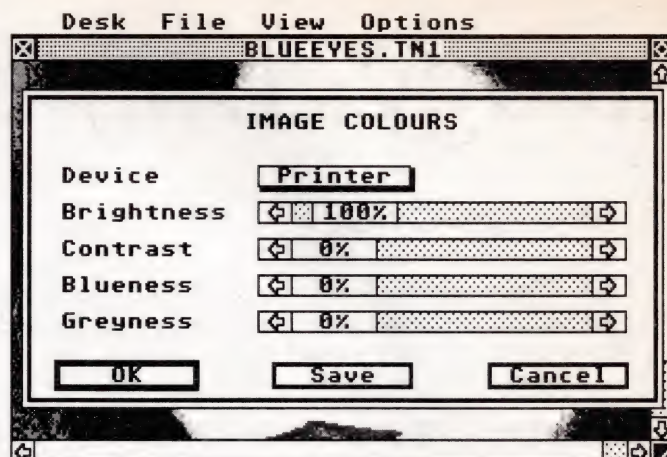
4) New print resolutions are now obtainable with Imagecopy Colour, and you can switch between these whilst you are within the program as well as Saving your favourite setting as the Default. The resolution set actually affects the size of the

resulting picture rather more than its quality, for instance 360 x 360 dpi (dots per inch) produces a tiny image, but selecting 60 x 60 will print a picture that fills up a whole sheet of A4. True scaling of images is not possible, but may come in a later version of the program which is expected soon.

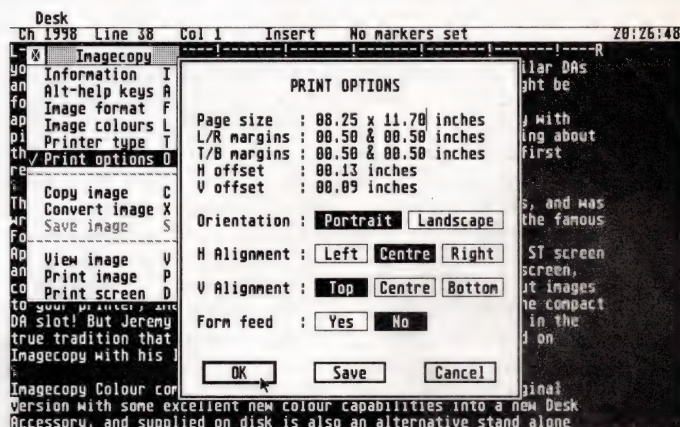
5) New keyboard shortcuts are now built into Imagecopy Colour in addition to the Main Menu options which could always be implemented by single keypresses. For example all the Dialogue boxes have shortcuts now: Control-C for Cancel, Control-O for OK etc. The windows containing images can also be controlled by shortcuts, e.g. the ST's Delete key will close the top Imagecopy window, and Tab cycles through all open windows. There are also shortcuts for controlling Imagecopy Colour's copying commands, and in fact, most of its other features too.

6) An improved version of IMGC.PRГ is included with Imagecopy Colour. This is a small program that can be installed via the ST's Install Application feature to call Imagecopy when you double-click on an image file icon from the Desktop. If the Desk Accessory version of Imagecopy Colour is already loaded IMGC.PRГ will call it, otherwise it will run the stand-alone version of Imagecopy if this is placed on your boot disk or in the same Directory as IMGC.PRГ. It's quicker and generally more convenient to use the Accessory version though.

7) And there are many minor enhancements that result in improved performance, e.g. new pop-up dialogues are used in some Dialogue boxes. These rather smart multiple choice mini-menus appear when you click on any shadowed dialogue boxes. Like the pop-up dialogues used on Atari's extensible control panel (XCONTROL.ACC), they clean up and simplify the screen appearance only showing all the many options possible when you want to actually adjust a particular one. And Imagecopy's Direct print mode now works with the Atari TT and other 68030 machines.



The manual explains in great detail what the settings do to the way your printer outputs the picture, and changing them couldn't be easier by using the scroll bars or arrows.



The "Print Options" menu is now automatically displayed just before the program begins any printing, and you can make last minute adjustments to the default settings should you wish.

## Conclusion

Imagecopy Colour is a fast and easy way to print out any images, and the results look very good, especially on HP's DeskJet printers. The new "Image Colours" option in the Main Menu of the program lets you fine-tune the colour, contrast and brightness of your printed pictures to ensure the best output from what ever kind of printer you are using. Jeremy has carefully thought out all the options to ensure that this program is useful and powerful, yet as simple to use as possible. If you already use Imagecopy and have or intend to get a colour printer (or a colour kit), you should upgrade to Imagecopy Colour without delay. Not only will you get a newer, smoother version and the ability to print in colour, there is the bonus of helpful advice on colour printing matters generally, contained in the well written 32-page Manual. And there are some attractive colour pics available from Public Domain sources: print them out and they're good enough to frame and hang up! And further good news is coming up on an increasingly colourful horizon. Jeremy is already working on Imagecopy 2, a super duper version that will include further image formats, Falcon support and exciting features that I'm not allowed to discuss!

Product:..... Imagecopy Colour  
Version:..... 1.5  
Price:..... £14.95, or upgrade from Imagecopy £4.95  
Supplier:..... The ST Club  
Telephone:..... 0602 410241  
Manifest:..... 32 page A5 Manual and DS disk  
System:..... All STs, STes and TTs



# Video Master

*Video Master is the latest release from Audio Visual Research and published by Microdeal. AVR, also known as 2-Bit Systems, were responsible for the entire ST Replay and Mastersound series of sound samplers.*

*Video Master is unique in that it is neither a sound sampler nor a video digitiser - it's both! It is the first ST product in what will inevitably become the multi-media revolution. Review by Steve Delaney.*

Do you remember the Snowman demo of about four years ago? Another classic was the Star Wars demo. Both used animated film clips sequenced together with digitised sound. Surprise, surprise, both were created independently by different members of the team behind Video Master. The Snowman demo was in fact created using an early prototype of Video Master.

AVR are the undisputed leaders in the field of sound sampling but how well would they do with their first commercial venture into video digitising? Surely Rombo have a monopoly in this market, similar to theirs in sound digitisers? How practical is it to use the same cartridge to grab sound and video? Surely there must be serious limitations. I was intrigued and so I opened the box, plugged in the cartridge and loaded up the software. Being familiar with Rombo's Vidi RGB and having used AVR's early samplers, I saw no need to read the manual first. It would merely be there as a reference guide. I couldn't have been more wrong! Video Master uses a completely different concept from anything I've ever seen and its multi-media features made it a completely new ball game. There was nothing more for it, I had to sit down and read it from cover to cover before I did anything else.

The manual is produced with Calamus, runs to 68 pages and is

well written and illustrated. It is organised into sensible chapters and is easy to follow. It is aimed at the 'average' computer user rather than beginner or experienced user.

The cartridge itself is 'L' shaped and much larger than most. I found it a very tight fit with virtually no wobble. It is undoubtedly the snugest fitting cartridge I've ever used. No leads are supplied with Video Master as those required will depend on your particular video and/or hi-fi set up. The inputs on the cartridge accept standard phono plugs so it should not be too difficult to rig something up. If your video recorder has a scart socket (as mine does), you will be able to buy a scart lead with the required phono leads at the other end 'off the shelf'. Otherwise, it's a case of taking the 'video out' and 'audio out' from the video recorder on two separate leads.

Just because Video Master is designed to be used as a video/audio sequencer does not mean that you can't sample directly from your hi-fi, nor does it mean that you can't grab video stills. The unit can be used as a top quality sound sampler, video digitiser or frame grabber in its own right, effectively bypassing its other features.

Setting up the blackness and contrast adjusters on the cartridge can be a bit of a hit or a miss. It

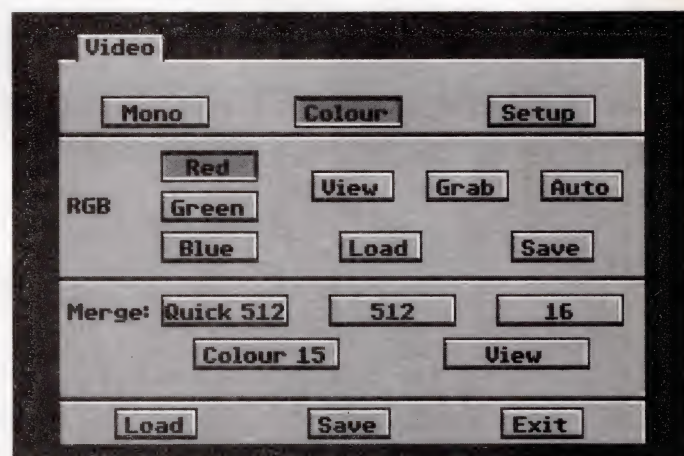
takes a fair bit of experimentation to set them to a level which will produce acceptable results. This is even more difficult if you are using an electronic RGB splitter (more on this later) as it has its own brightness and contrast controls. Once everything is set up satisfactorily, it is unlikely that it will ever need to be changed.

Video Master runs on any Atari ST, STE, TT (in ST resolutions) or Falcon. Although it is technically possible to run the software on a 520, this would only be practical for capturing video stills. At least 1 Megabyte of RAM (the more the better) is required if you intend to do any serious sound sampling or video sequencing. If you have more than 1 Meg and intend making use of it, a hard drive will be essential as a floppy simply doesn't have the necessary storage capacity. Although more memory and a hard drive allow larger sequences to be worked on, the fact that Video Master can be used on a 520 is a definite selling point. The designers have gone to great lengths to maximise use of all available memory.

The software is very graphically orientated and works on the

basis of different 'cards' for different functions. There are separate cards for video, audio, sequencing and system set up. Clicking the card name brings the selected card to the top of the pile and makes all its functions available to the user. All the cards are integrated with each other and indeed compliment each other in certain areas.

Video sequences are recorded using 16 grey scales by default or other colour palettes by choice. Current technology makes it impossible to digitise moving pictures in 'real' colours. I'll explain why later. Throughout this review I will refer to digitised stills using more than 16 colours as 'real' colour (for lack of a better word) to avoid confusion with 'true' colour as is supported on the Falcon. Video stills can be digitised in colour but this involves purchasing an electronic RGB splitter separately. The current price for these is not much less than Microdeal charge for the entire Video Master package! Some people require this feature and others don't, so it seems sensible to leave it out of the basic package, thus keeping the cost down. I already





own an RGB splitter so I was able to test this feature in the course of the review.

The cards take up almost 50% of the screen with the rest being spit between an audio and video window. The physical screen area used to display an actual incoming video signal is 25% of your total screen area. The video 'window' is like a mini TV screen and allows you to watch an incoming signal or play back a pre-recorded sequence.

All animated sequences are recorded at quarter screen size. This is done to conserve valuable memory. A quarter screen frame takes up only 8k of memory and disk space as opposed to a full screen which requires 32k. I didn't like the quarter screen idea to start with but it soon grew on me. The smaller animations give a closer representation of the real thing than a full screen does. To give you an example, try shrinking a picture in an art package and the quality will improve as the size reduces, up to a certain point.

Frames are grabbed from the incoming video signal at a rate set by the user. An incoming video signal can be monitored using the watch button. You can choose to grab 2, 3, 4, 6, 8, 12 or 25 frames per second. The default setting of

12 gives great results. The more frames you grab per second, the smoother the animation. However, the higher the frame rate, the shorter the animation. It's just a case of getting the right balance. I used 6 frames per second and was pleased with the result. Any less gave a noticeable slowing down of the animation. Using a 4 Megabyte machine I was able to get about 330 frames of animation into memory along with sampled sound, creating a 'film' of just under a minute.

Individual frames may be saved to disk but they will first be expanded from 160x100 (the size they are grabbed at) to 320x200 pixels in size so they will appear blocky. The answer of course is to go to full screen mode to grab video stills (either 16 colour or 'real' colour stills are grabbed here).

Edit mode presents your screens as a long roll of miniature film which may be scrolled through at will. Individual frames may be added or edited out from the video clip. It's just like editing a video or cine film. The editor is very powerful and allows you to mark and remove a block of frames or remove all frames either side of a marked block. Reverse block has the effect of

making everything run backwards and can be rather amusing. Frames may be added or deleted but you are liable to lose the frame at the end of your animation unless you extend the video clip to occupy the entire buffer (assuming it does not already do so). Single frames may be grabbed and inserted into your video clip or 16 colour pictures may be loaded from disk.

As well as recording video sequences, you can also record sound simultaneously from the video card. In many cases this can give acceptable results. However, there will be some loss of quality as compared to recording audio and video separately.

As I said earlier, it is possible to abandon the grey shades, pseudo colours or whatever you want to call them and go for 'real' colour by using an Electronic RGB splitter box. The one I use is the one supplied as part of the Vidi RGB package. It's fiddly to use and particularly expensive. To my knowledge it is the only one on the market. I have no doubt that AVR will come up with their own version, specifically geared to Video Master, in the near future.

An RGB splitter plugs in between your video source and your digitising cartridge. It requires a 9 volt external power supply to operate. Essentially it works by taking three snapshots of a single picture. For obvious reasons, the picture must remain static while these grabs are being made. Some video recorders have a better (less jumpy) freeze frame facility than others. The quality of the frame grab depends very much on how static the picture is, combined with the quality of the video tape. Always record material you intend to digitise onto brand new video tapes.

The three snapshots have to be taken manually with my RGB splitter but I believe later versions allow you to take them automatically. The picture may then be viewed on screen and the RGB values fine tuned for increased clarity. You then select whether you want the frames to be merged to create a 16 colour P11, PC1, NEO or IFF picture or a high colour SPC or SPU picture. Merging the RGB components is about 5 or 6 times faster than with Vidi RGB. An option is given to use colour 15, a reserved colour in the Spectrum 512 package. Using this option can yield superior results for use in a slideshow but may cause problems if you try to edit your picture in Spectrum 512. The end result of

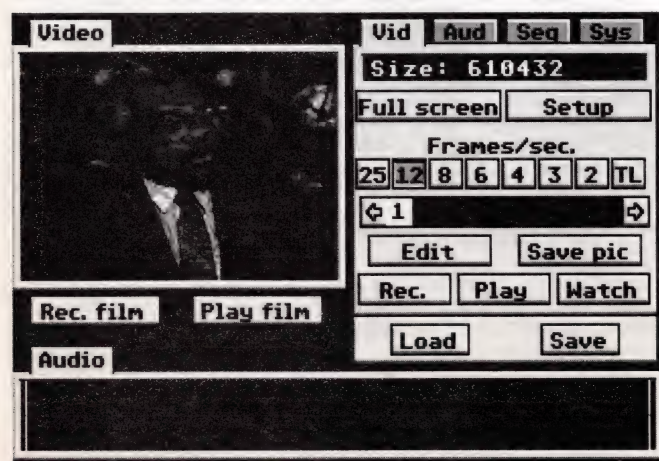
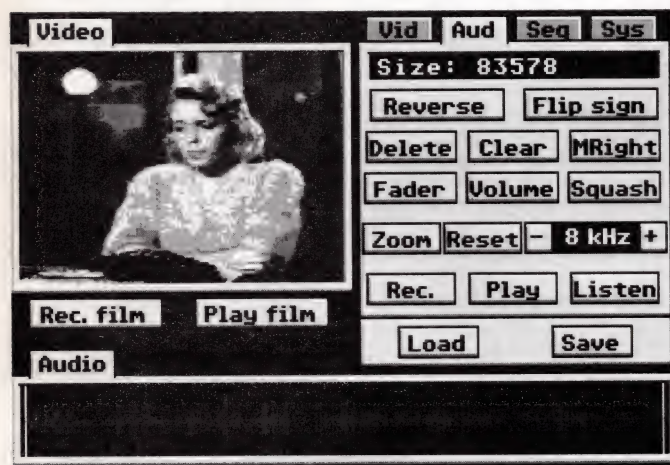
your manipulations is then saved to disk for use in your favourite art package.

Now for the reason behind the inability to digitise animations in 'real' colour. As I said above, each frame for a colour grab must be taken as three snapshots, one for each component colour. Creating animations could not be done in real time as RGB grabs cannot be taken fast enough. The result would be weeks of work grabbing the animation frame by frame. Even then, Spectrum 512 screens take up substantially more memory and disk space (even when using SPC format) than 16 colour formats. This makes any decent sized animation impossible. In addition, so much processor time would be tied up displaying the picture that the sound samples could not be played simultaneously.

The audio card is more or less a complete sound sampler. The sampler included within the cartridge is a mono 8-bit one, similar in quality to Replay 8. There are other samplers on the market (most of these are also from AVR) which support 12-bit and even 16-bit recording, allow output to your hi-fi, record and play back in stereo and so on. If you really need that sort of quality or already own one of these cartridges, you can do your sampling with the more expensive cartridge and import your samples directly into Video Master. Samples may be imported in AVR, SPL, SAM or IFF (Amiga) formats. If you want to save out your samples for use with another sampler, Video Master allows them to be exported in SPL, AVR or IFF formats.

I was surprised just how good the samples were, considering this cartridge is so sophisticated on the video side of things. I was expecting the sound capabilities to suffer at their expense. This has not happened. Sound can be sampled at any rate from 1khz to 16khz and the incoming signal can be heard via the listen button, useful if you need to adjust the volume. How can you adjust the volume on a video recorder? AVR have obviously thought of this and the contrast knob doubles up as a volume button when recording sound. Regrettably, the side effect of this is that adjusting the contrast knob affects both the volume and contrast if you are using the record film option. This is another reason why you should record audio and video separately.

The editing facilities of the audio card are as good as any





other comparable sampler. The sample can be zoomed for editing, reversed, faded in or out, volume increased or decreased, blocks deleted and so forth. One of the most welcome inclusions is the ability to squash a sample! This takes a sample and compresses it so that it uses half the memory (and disk space) and plays back at half the frequency. A sample taken at 16khz and squashed will not sound as good as a 16khz sample but will be far superior to one created at 8khz. Often you will have to compromise between the amount of free memory and the preferred sample rate, in order to fit the sample into memory. Using squash can often provide the answer. Another useful feature of the editor allows you to import samples from almost any sampler and convert them to the signed format used by Video Master.

The sequencer card is where it all happens and your masterpiece gets stitched together here. In order to create a sequence, each piece of video or sound must be assigned to one of 24 keys on the keyboard. After assigning every-

thing to the relevant keys you select 'Record Sequence' and press the keys in the order in which the clips are to be played. Full use of looping of audio and video are possible within the sequencer and should be used to their maximum effect in order to save valuable memory and disk space. Video clips running at differing frame rates and audio samples at different frequencies can all be strung together here.

The features of the sequencer card are many and varied. You have full control over the editing of your final masterpiece and synchronising all the 'bits' together. The end result is then saved to disk as a sequence which can be played back using the player program provided. You can then enter the name of the sequence into the TTP parameters option to see it replayed at full screen size. As this looks rather blocky, it is advisable that you create an ASCII control file which instructs the player as to how you want the animation run. The animation can be quarter size (as recorded) and displayed at any

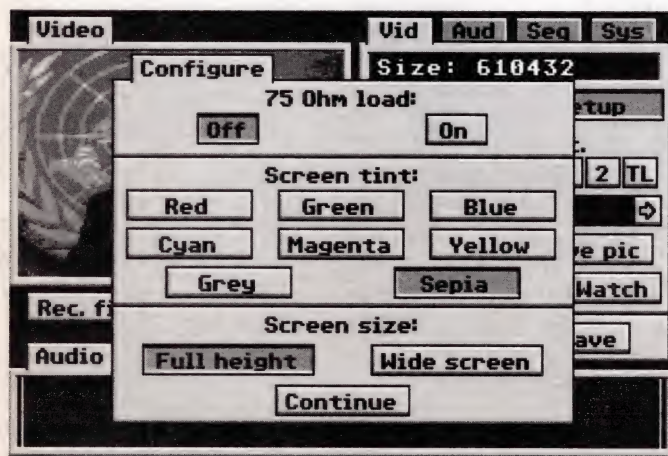
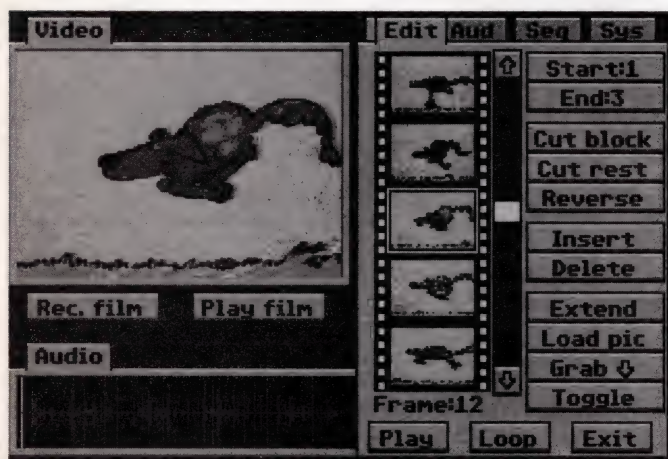
x,y position on the screen. A picture file may be loaded up as a background and the sequence will play as a window within the picture. You can even display the sequence as four mini-screens running the same 'film' simultaneously. A pause can be inserted to allow a picture to display as a title screen or freeze the animation when it ends, before looping back. Auto booting demos can be created by renaming the player to .PRG and putting it into an Auto folder along with the control file.

Video Master will also run on the Falcon. A separate program is used for this and the video, audio and sequencing cards work in an identical fashion to the ST version. The difference comes in to play on the grabbing of colour stills. The Falcon version supports 16 colour pictures or true colour. In true colour, it saves out the file in a RAW format. This can be converted to GIF or TARGA using conversion utilities supplied on disk. Regrettably the true colour screens only use 4096 colours, disappointing when you consider that the Falcon is capable of displaying 65,536 in

this mode! Having said that, I've seen some pretty impressive near photographic GIF pictures recently and GIF only supports 256 colours.

Quite frankly I was disappointed with the Falcon software. It worked perfectly until I tried to grab a static frame (either grey scales or colour) and the machine crashed. To be fair to AVR, they received their Falcon two months after the ST version of Video Master had been completed. They had no idea which file formats would be adopted on the Falcon and had inadequate documentation to implement true colour to its best advantage. Their development machine was substantially different from the production models and this seems to have been the reason for my problems.

I'm glad to say that I could find no such criticism of the ST version. It performed beautifully and is a solid piece of professional software. Don't let Video Master's budget price tag put you off. The price may be in the budget bracket but the features are not!



Video Master is available from Microdeal (address above) for £69.95.



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Information Box	
File Loaded	A:\TEST.DAT
Program Status	Max addresses storable: 20
Normal Operation Mode	Tot addresses in file: 7
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13 Wales Univ. Union, Park Place, Cardiff  
1993  
Jan 17 West Midlands National Motorcycle Museum J6 M42  
23 North East Northumbria Centre, Washington, Dist. 12  
24 North Univ. Sports Centre, Calverley St., Leeds  
30 Nottingham Jesse Boot Centre, University  
6 London Novotel, Hammersmith  
7 Wales Univ. Union, Park Place, Cardiff  
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14 West Midlands National Motorcycle Museum J6 M42  
20 North West Haydock Park Racecourse J23 M6  
21 Scotland City Hall, Candleriggs, Glasgow  
27 West Hemel Hempstead Dacorum Pavilion, The Marlowes  
28 West Brunel Centre, Templemeads, Bristol  
March 6 Leicester De Montfort Hall, Granville Road  
7 North Univ. Sports Centre, Calverley St., Leeds  
20 London Sandown Park, Esher, Surrey J9/10 M25  
21 West Midlands National Motorcycle Museum J6 M42  
April 3 Edinburgh Appleton Tower, George Square  
4 Scotland City Hall, Candleriggs, Glasgow  
17 Nottingham Jesse Boot Centre, University  
18 West Midlands National Motorcycle Museum J6 M42  
24 London Sandown Park, Esher, Surrey J9/10 M25  
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# ARRANGERS

## A Comparison of three Arrangers: Band-in-a-Box, Freestyle and Session Partner

All arrangers follow the same principle. The musician provides the tune and a framework of chords, the program converts the chords into an accompaniment. Where they differ is to what extent the music is input up front, and to what extent it is generated as needed. Spontaneity determines the program's live usefulness. If all is prepared in advance, the musician becomes a disk-jockey, and the program is more suited to recording. If all were to be generated on the spot, neither the computer nor the musician could work fast enough!

Band-in-a-Box (BB) and Freestyle solve the dilemma with a similar compromise. The chords are entered in advance, and coupled to a style. The style regulates the instrument selection, and details on how the bass, rhythm, chord accompaniment and drums are to play. Style variations (Freestyle 6, BB 2) and a small degree of randomness make things less automatic.

Band-in-a-Box, now in its 5th version, is the elder statesman of the arrangers. It comes from the USA, out of the PC world, with the strengths and weaknesses one expects from such origins. It has work-arounds for a number of practical problems and a large range of functions. They are all accessible with a keystroke combination (IBM-intuitive) and over the menu. The screen is, frankly, primitive, though better in mid-resolution than in mono - but it is the only one which shows the notes as they are played. It comes with a good selection of the all-important styles, and many more can be purchased.

Chords are typed in, with an independent bass note if desired. Entry is fast, and the results can be heard and edited as you go along. The tune is usually played live on the keyboard, its notes passing unchanged via the Atari to the sound generator (MIDI-thru mode). The melody can also be played in, edited and stored. Style, tempo and instruments can also be adjusted during an editing cycle. For longer

*Since the mid-80s, music-making has been in non-silent revolution. It is now possible to buy your personal orchestra, for the same price as a hi-fi set.*

*Directing a MIDI-orchestra is not that much easier than its human counterpart, and several types of program have grown up to facilitate this. Sequencers are multi-track digital tape-recorders. Editors create new sounds on synthesizers, samplers play quality copies of existing sounds. Arrangers, the subject of this review by Britt Johnston, provide musical backing.*

pieces, the song can be put together section by section, in the normal form - intro, verse, chorus, ending, with repeats.

New styles are played in instrument by instrument, and can be edited, and saved. The result is usually better than the generic style, since it can be fine-tuned to match a particular song. The song, with chord progression, style, instrumentation (and melody, if entered in BB) can be stored for future use. The chords, but not the melody, can be printed as a 'lead-sheet'. It can be saved as a MIDI-file, giving access to other MIDI hard and software.

Freestyle is a more elegant-looking program, with more flexible entry and more voices than BB. However, it is so similar in function that it is easier to discuss the few differences. The biggest advances are in real-time use, where, thanks to MROS, a Steinberg musical extension to TOS, music and program changes can co-exist.

Session Partner's concept is different. A dice level interacts between the style and the chord progression. The whole song can be randomised, as can each instrument and each section. A click on the appropriate die changes to a new, musically acceptable pattern. Just keep clicking until a pattern suited to your song appears. The sections, typically a few bars long, are assembled on a scroll, so that quite complex works can be built up and changed easily.

Session Partner varies its play-

back more, too. Whereas BB regenerates the accompaniment before playback, with an irritating seconds-long wait for longer pieces, Session Partner thinks as it goes along. What with the dice, and the changes on playback, you don't feel in total control. Such a lack might unnerve a computer operator, but a musician should be happy to live with this human touch once he has adjusted to the program.

All MIDI programs have to overcome the differences in the instrument range that MIDI hardware offers. GS instruments (MIDI general standard) will make life easier in a few years, and both Freestyle and Band-in-a-Box recognise GS and many others of the more common keyboards and expanders. Otherwise, they all allow you to pre-assign the output to specific instruments (drums are especially critical).

While playing, BB and Freestyle allow you to change instrumentation (BB has 10 pre-sets) and tempo. Session Partner permits you to vary the 'swing' and offers 'real-time fills' (original German). Both Freestyle and Session Partner can be switched over to an automatic accompaniment section, which recognises the chord as it is played, and reacts musically to it as prescribed by the style. You can switch instruments on and off while playing. Freestyle can be connected to a remote controller, and run without a monitor. All three can be synchronised with a tempo provided by your external

MIDI set-up.

These examples of real-time functions show that arrangers are designed for live use. MIDI-sync allows the program to be part of a band. On stage, too, reliability takes priority over sophistication. Hours of maltreatment have led to only one crash (with BB). In contrast, in studio use, such as preparing a demo, quality is more important than speed.

Freestyle has one feature well-suited both to real-time work and further processing - it can run concurrently with Cubase. Home-made styles, a time-consuming but rewarding way to your own music, can be up-loaded from a sequencer. It is also designed to extract chords and styles from MIDI-files, and to load melodies. The present version likes melodies as MIDI format 0 files, which my sequencers unfortunately don't generate.

Session Partner is also well suited for composition, as well as arrangement. There is a risk in writing chords first, then making melody the icing on the cake - the tune may turn out to be unmemorable. But the technique has its place. I identified a snatch buzzing round my head as being a Session Partner section. The section had meanwhile been diced to something less catchy, but a little patching by hand improved the piece. Often, each 'take' of a Session Partner song delivers ideas worth expanding.

What do the arrangers sound like? Two songs, from a set of six, were prepared on each program. The resulting MIDI files can be found on the ST Club disk. Assembly is fast, half an hour is plenty for a song if a suitable style can be found. I found Band-in-a-Box to be very reliable musically, with simpler output and smaller MIDI-files than the other two. It was sometimes difficult to find a suitable style for Freestyle. Session Partner can be hectic. The number of voices used is one cause of all these effects. DVPI, Session Partner's German distributors, have a demo CD, with a clean sound, which



BB's authors believe the best way to learn the program is to try it. Their manual is scruffy, but gets you going quickly, and addresses the problems adequately as they arise, at the expense of a good overview. I appreciated the value of this approach after wading through Session Partner's effort (theory first, examples follow), well written and easily understood though it may be. I hope the English version adds a quick-start introduction and puts a few examples to reverse engineer on the disk. Free-

style's offering is a good compromise, being well illustrated, understandable and concise. It is bilingual, with English on the even pages. The language problem is well solved in the program, too. A click in the menu, and the program switches between English, German and Dutch.

You are not expecting me to choose the best arranger, I hope. I don't even know which single one I'd take to a desert island. My main recommendation to those interested in making music is: get one, at least. They are no longer technical toys, but useful tools. You will grow with your choice, as

with a word processor, and then prefer to update rather than change.

To jump on the bandwagon, you'll need an Atari with a minimum of one megabyte, and a multi-voiced keyboard or expander. (Session Partner also needs a b/w monitor.) Musical knowledge is harder to come by. If you know a little about chords, through experience with a guitar, a keyboard or a band, you'll learn more about harmony and arrangement as you go along. When you can consistently produce better accompaniments than these programs, you've become a pretty good musician. Even then, you'll still appreciate their support, for speed and inspiration.

An English representative is an important plus. However, now that European trade laws are in force, Soundpool can be expected to uphold their guarantee throughout Europe. As their product is ready for the English market, your or your retailer's risk is that of normal mail order. It will be interesting to see if Session Partner's different approach, which sells successfully in Germany,

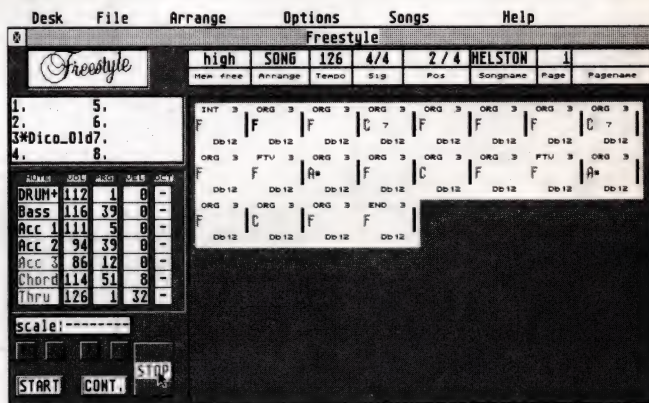
Italy and Spain, can do well in England. Band-in-a-Box's main strength lies in value for money.

Next major versions of Session Partner and Freestyle are expected to have an integrated sequencer, which should make style and song loading easier.

Arranger programs are not just competing among themselves. Most keyboards outside the economy class have a built-in arranger and sequencer. They are designed to make the most of the keyboard, and are thus often more advanced than their software equivalents. Software soon supports the technical advances, however, and software arrangers are equally compatible with all equipment. One use of an arranger program would be to upgrade a synthesizer or keyboard.

Cubase owners should also look at a newly-released accompaniment module called **Styletrax**.

*I'd like to thank Robert Vogel, professional programmer and amateur musician, for several insights, glasses of red wine and hours of his time on this project.*

[illegible]

△ Freestyle comes with ROM dongle in 2 versions, PRO version 3.1 (DM398) and JUNIOR (DM198), from Soundpool, Brunsbütteler Damm 5, D-1000 Berlin 20; Tel: 0044 30 331 7091.

Junior has no manager to record or edit its own styles (a set costs DM69), and has bass, chord and drums without the three other voiced accompaniments.



Files	Tools	Edit	Setup	Extras	Display
New Save Load Block Load Block Save ----- METAfile Print Quit	Line Circle Arc Rectangle Ellipse Fillet Bezier ----- Label Dimension Xhatch	Copy Move Move to Layer Delete ----- Rotate Mirror Scale Scale X Scale Y Project	Line Style Grid Options Layer Options	Redraw Zoom Zoom All Zoom Default Pan Measure Undo Calculator Status Purge System High-Lite Entity	Labels Not Visible Xhatch Not Visible Dims Not Visible

# tbxCAD

According to the manual cover, tbxCAD is 'Champagne CAD at a beer price'. Joe Connor (who prefers beer to Champagne) examines this claim in greater detail.

**L**aunching another CAD package into the current Atari marketplace certainly shows real commitment. TbxCAD comes from Canada where the distributor, ABC Solutions, are active supporters of the Atari platform.

Installing tbxCAD is straightforward: simply copy all the files from the single floppy into a folder on a hard disk or make a working copy of the master disk. The working screen displays a menu bar across the top of the screen and a prompt line along the bottom. This uncluttered drawing screen leaves the maximum screen display area available for drafting, which on a standard ST is more important than at higher resolutions.

Many CAD programs require the sheet size and scale to be predetermined before any drawing

commences. TbxCAD employs an infinite drawing plane, limited only by available memory. Movement around the drawing can be achieved using the usual range of zoom tools. Alternatively, moving the cursor to the screen edge causes the drawing to dynamically pan in that direction. The effect is better on faster machines as the scrolling is smoother, but nevertheless it is an excellent facility. Using dynamic panning it is possible to move around the drawing in mid command, making it much easier to select the desired points in a complex drawing. It's a feature normally only found on high end software. Another nice touch is the default view option which enables one screen view to be saved and re-displayed without fiddling with the usual zoom commands.

All commands are initially

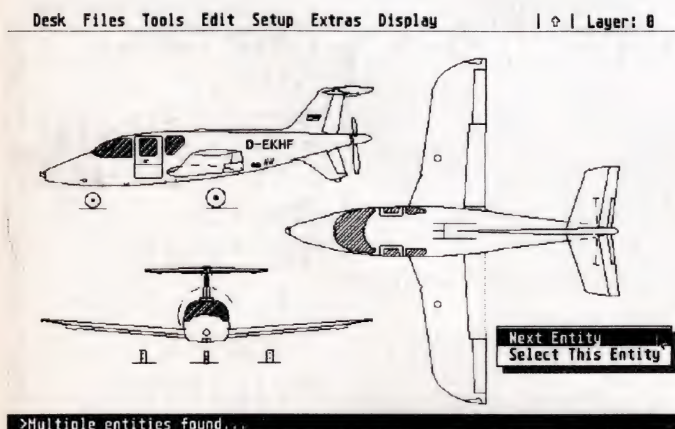
selected from one of the drop-down menus, which in turn displays other drop-down menus or tbx 'magic' menus. Magic menus are mobile popup menus which appear under the cursor offering options within the selected command. This method of working is ideal for a beginner as only the relevant options are presented, no bewildering array of icons to learn, in fact tbxCAD has no icons, anywhere!

The commands work in a consistent and logical fashion. First a drawing tool is selected from the tool drop down menu; next the method is chosen from the 'magic' menu, and finally the element is positioned on the screen using the cursor.

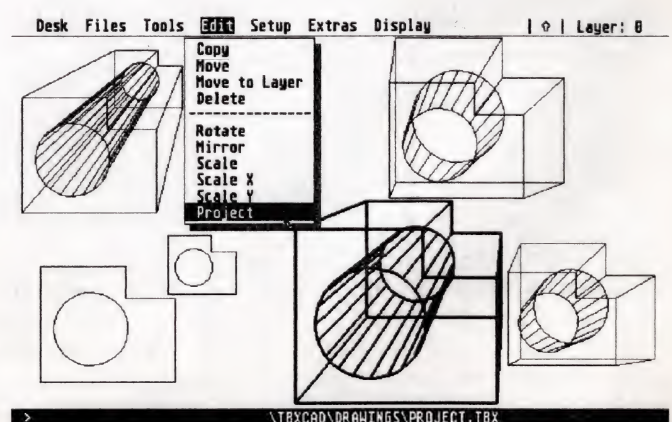
Accurate control over the cursor is provided by a comprehensive selection of snap tools, called 'specks' (short for Specific loca-

tions) in tbxCAD jargon. After a drawing tool has been selected the usual drop down menus are cleared and replaced by the 'specks' drop down menu. Using the relevant 'speck' any desired point on the drawing can easily be selected. The more common grid commands are also available, but as the 'specks' are more flexible grids are really only useful for constructing drawings which conform rigidly to a pre-defined grid, e.g. PCB layout.

After commands are executed a manual Redraw, using either the drop down menu option or the Clr Home key is needed to clear the screen of debris. This was possibly a deliberate decision by tbx to maximise speed, especially on the slowest ST models. Redrawing the screen is processor intensive but an option to toggle redraws on/off would benefit owners of faster



This pop-up menu alleviates the irritating problem caused when drawing elements are directly on top of, or very close to, other elements. If this appears when selecting an apparently single line you know there's another one hiding underneath: very neat. Some high-end packages don't cope this well.



I haven't seen this command before. Here's an analogy to explain what's happening. The original shape (on the left) casts a shadow. The size and shape of the shadow depends on where the focus (light source) is placed. The lines connecting the original and projected copy are optional.



Specific Location	Insert Dim	Edit Dim
Intersection	Parallel	Height
End Of Entity	Horizontal	Arrow Size
Relative To Loc	Angled	Arrow Direction
XY	Vertical	Follow Line
Digitize Point	-----	Auto/Non-Auto Loc.
Tangent To Arc	Radius	Scale Dimensions
Centre Of Entity	Diameter	Delete
On Entity	Angle	Move
		Fix
		Redraw

Atari models and reduce the number of manual redraws.

Labels are text elements in tbxCAD-speak. Two drafting style vector fonts are included which can be displayed upright or italicised. A font editor is included to edit or create additional fonts.

Dimension commands vary considerably between applications and tbxCAD is no exception. The dimension style editing options attracted my attention. The dimension text height, angle and number of decimal places, arrow size, arrow direction, and placement can all be edited after positioning. This flexibility minimises the time spent deleting mistakes considerably.

Bearing in mind the editing facilities for dimensions and text it is surprising there appears to be no way of changing either the line thickness or style of existing entities.

Using a bold line thickness gives a messy detail where vertices connect, an option to specify different line end styles would improve this.

The crosshatching routine works well and is not prone to leak out of tiny holes in the hatch

boundary like some packages I could mention. The single line pattern can be varied by using different spacing, angle, line styles and by overlaying two or more patterns which should be adequate for most purposes.

The Undo command simply deletes the last element drawn and should be used with care as the deleted elements cannot be restored.

### The bad news

TbxCAD cannot import files from other applications. Files can either be exported in .TBX or .GEM Metafile format, the .GEM format providing a route to DTP packages for fine tuning and output. The Metafiles I generated were all distorted. Using ST high resolution the image was stretched and using ST medium resolution the image was squashed. In some applications it is possible to rescale the image to compensate for this but as this is the only file export option provided tbxCAD should sort this out.

Direct hardcopy options are limited to Epson compatible dot matrix printers and that is it. No support for inkjets, bubblejets or lasers, no tiling support to

◁ The custom drop-down menus on the facing page provide initial access to every command.

GEM Metafile output requires GDOS (not included) to be installed. The current screen view is saved in GEM Metafile v1.1 format.

The purge command in the Extras menu frees up wasted memory space taken up by deleted segments. The Display menu individually switches off text labels, cross hatching and dimensions, speeding up screen redraws considerably.

Selecting a drawing tool from the Tools menu posts the Specific Location menu, which replaces the default menus. Similarly, selecting Dimensions from the Tolls posts the Insert and Edit Dim menus.

generate large drawings either. Not good enough.

### Summary

**Points for:** price, very good draw, edit, dimension and snap tools, pleasant to use in ST medium resolution.

**Points against:** limited import/export/output options. Skimpily manual, cannot use accessories.

**Conclusions:** tbxCAD doesn't fall neatly into any particular discipline - it is a true general-purpose CAD package ideal for tackling small projects. The relatively limited Symbol handling commands do not make it the obvious choice for either Electronic or Architectural use but its fast easy to learn interface and pricing level make it an ideal first time or student CAD package.

The text-based combination of drop down and 'magic' menus works well in both ST high and medium resolution. There are a few rough edges: the dialogs have an unfinished feel to them. The slender manual suggests 'you may need to experiment' with the thorny problems of printer drivers and Metafile output! It's enough to get up and running, but a more

comprehensive tutorial and index would be welcome.

Overall, not so much Champagne as Sparkling wine, but very refreshing indeed. If you are looking for a CAD package to tackle small projects tbxCAD offers excellent value for money.

Alternatives: the CAD Super-test in STA14 covers the alternatives in detail, these are CADja, DynaCADD, GFA Draftplus, Technobox Drafter and Becker-CAD.

Product:.....tbxCAD

Version:.....2.1

Distributor:.....The ST Club

0602 410241

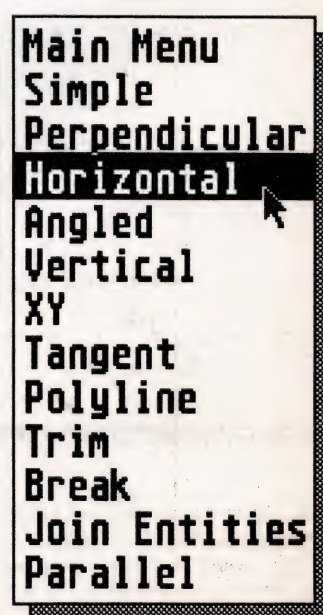
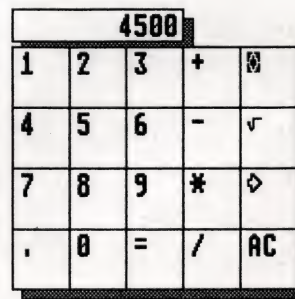
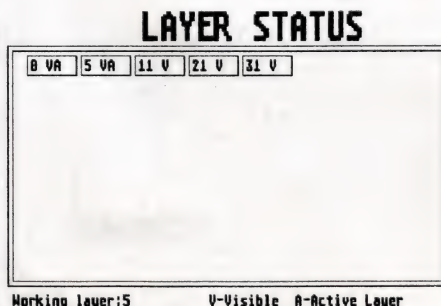
Available:.....April 1993

Price:.....£49

Manifest:.....55-page, wide A5 manual and single-sided floppy disk.

System:.....tbxCAD will run on any Atari computer from a 520ST to a TT.

Resolution:.....ST high and medium, TT high. Did not display correctly at other higher ST resolutions.



Above left: this magic menu is called from Line Style in the Setup menu. Line thicknesses from 0-16 can be set. The selected thickness and style appear on screen and output.

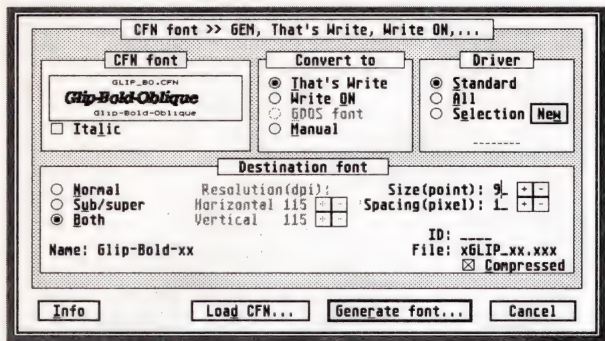
Above centre: this alert box only displays the status of visible and active layers only and cannot be used to change layers in any way. Layers containing elements which have been turned off (invisible) are indistinguishable from undefined (empty) layers which is not very helpful.

Above right: it's always handy to have a calculator available. This one does not interact with the command line but as desktop accessories cannot be accessed it's useful to have around.

Right: another tbxCAD magic menu. Identical in style to the drop down menus these one's follow the cursor round the screen until an option has been selected. This example shows the different line drawing options.



# C-Font



Converts outline fonts in .CFN file format to GEM bit-mapped fonts at various point sizes for That's Write, Write ON, K-Spread, Calligrapher, Redacteur 3, Timeworks Publisher 1 and 2, Fleet Street Publisher, and any application that uses GDOS fonts.

C-Font can be installed as an Accessory allowing it to generate fonts 'on-the-fly' from within your application. When generating fonts for That's Write, Write ON or GDOS applications C-Font will automatically work out what resolution of fonts you need to generate.

**£9.95**

**The ST Club**  
2 Broadway  
Nottingham  
NG1 1PS

CFN to GEM Font Converter  
presented by COMPO  
© 1991 by  
Jeremy Hughes & Ralf Becker  
OK

# Imagecopy

\* Copy images from screen and save them in IMG, Degas or RSC format. Images may be copied by pressing Alternate-Help, allowing you to capture images when the Accessory menu is not available.

\* Flexible rubber-banding system which allows images to be selected with a fine degree of accuracy.

\* Copies images from both standard and large screens (including virtual large screens such as MonSter) in any of the normal ST/TT resolutions except TT low resolution.

\* Convert images to different formats. Imagecopy reads images in IMG, Degas, NEOchrome, Art Director, and Tiny format, and writes images in IMG or Degas format.

\* View images on a monochrome or colour monitor (colour images are dithered on monochrome screens). Up to four images may be displayed simultaneously.

Imagecopy is supplied as a desk accessory and as a stand-alone program. A fully illustrated manual is included.

Imagecopy	
Information	I
Alt-help keys	A
Image format	F
Image colours	L
Printer type	T
Print options	O
~~~~~	
Copy image	C
Convert image	X
Save image	S
~~~~~	
View image	V
Print image	P
Print screen	D

\* Print images and screen dumps in a variety of resolutions on a range of different printers, including: 9-pin or 24-pin Epson-compatible dot-matrix printers, Bubblejet printers, and Deskjet and Laserjet printers. Print speed is much faster than normal GDOS output.

Also available:  
**Imagecopy Colour**

**The ST Club**

2 Broadway  
Nottingham  
NG1 1PS  
Phone (0602) 410241

**£9.95**

# C & P Rossiter

For the best prices on hardware and service, contact the experts.

TOS 1.4, TOS 2, Blitters, memory upgrades, repairs, hard discs, scanners etc.

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Please phone, write or fax for a price list

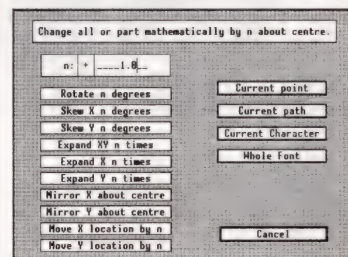
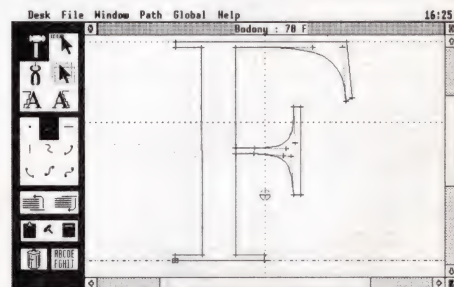
**C & P Rossiter**  
48 Park Drive, Hucknall, Nottm.  
NG15 7LU  
☎ (0602) 681870

This is a fully featured editing program for creating and editing Calamus CFN-format font files. Also, when used in conjunction with C-Font or Fontkit Plus, CFN files created with Fonty can be used to generate sets of bit-mapped fonts for use in packages such as: K-Spread4, Degas Elite, Timeworks DTP, Calligrapher, That's Write, Redacteur 3, and Wordflair.

Fonty features include: draw mode icons (Hammer mode, Pliers mode, Move mode, Select path mode, left and right kern mode), Grids and Guide Lines, Manual and Automatic kerning, Backgrounds for tracing (a Degas picture or a complete GEM font), a full feature Calculator to mathematically manipulate fonts, and Window scaling. A separate program, PFB2CFN, reads a Postscript Type 1 Font file and copies it into a Calamus CFN font file.

# Fonty

## Calamus Font Editor



**The ST Club**

2 Broadway  
Nottingham  
NG1 1PS  
Phone (0602) 410241

**£11.95**



# Tricks with your Mouse

*The Mouse Tricks 2 package combines three separate utilities, Mouse Tricks, Read Text and Big ST.*

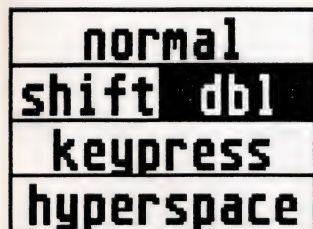
*Author Jonathan Lawrence outlines their main features.*

## Mouse Tricks

Mouse Tricks is a many-featured mouse utility that manages its plethora of options by storing up to twenty different groups of settings as "mouse modes". Different applications will often require different settings and Mouse Tricks can set these up automatically by installing a chosen mouse mode when a program - one in a list of up to forty - is run.

Mouse modes can of course be selected and edited manually, either with the dialog boxes or, for speed, with the audio-feedback Mouse Tricks keycodes.

The settings held in each mouse mode specify the precise control of mouse movement, menu style (pull down or drop down), options of added features when the mouse hits the edge of the screen (wrap around or cursor key emulation), plus the optional activation of a screen saver and the use of spare mouse button/s (or added "joy buttons" - up to four of them) to activate special effects.



These special effects add power to the mouse; helping you perform typical mouse operations more quickly and easily, or achieve with the mouse alone an operation that previously required you to swap between mouse and keyboard.

Four types of special effect are available: shift, double click,

keypress and hyperspace.

"Shift" temporally sets up any mixture of Shift, Alternate and Control keys; useful in operations that require some combination of shift keys and mouse movement.

"Dbl" simply emulates a left button double click - for when your fingers fail you.

The remaining special effects, "keypress" and "hyperspace", have rather more options. For each you can store and name fifteen groups of settings; the keypress and hyperspace modes.

"Keypress" combines an optional left button click and shift key combination with a selected keypress. It is most useful when you want to combine an often repeated keycode with an element of graphic positioning; the "click delete" mode, for instance, providing a single action "point and click" method for deleting text characters (or an object in a drafting program).

"Hyperspace" allows you to temporarily change the mouse speed, jump horizontally and/or vertically to a specified position, and jump back when you've finished your operation, with the option of an automatic left click on the way to select a desired item.

The preset modes (which are easily to modify) are each tuned to a particular function - ranging from menu selection to speed switching.

The "menu jump y" hyperspace mode, for example, dramatically reduces the amount of mouse movement required for menu selection - especially useful when you want just to glance to see if a particular menu option is switched on or off.

Until now only the right mouse button (if unused by the current program) or add-on joy buttons (so called as they plug into the joystick port) were available for triggering special effects. The latest version of Mouse Tricks widens this option in two ways. First, you can choose that in a particular mouse mode the right button special effect be triggered only on long clicks - allowing it to be used even in programs that themselves use the right button. Second, a new serial mouse driver lets you connect a three button PC mouse to the ST's modem port, and use the middle button to trigger an additional special effect.

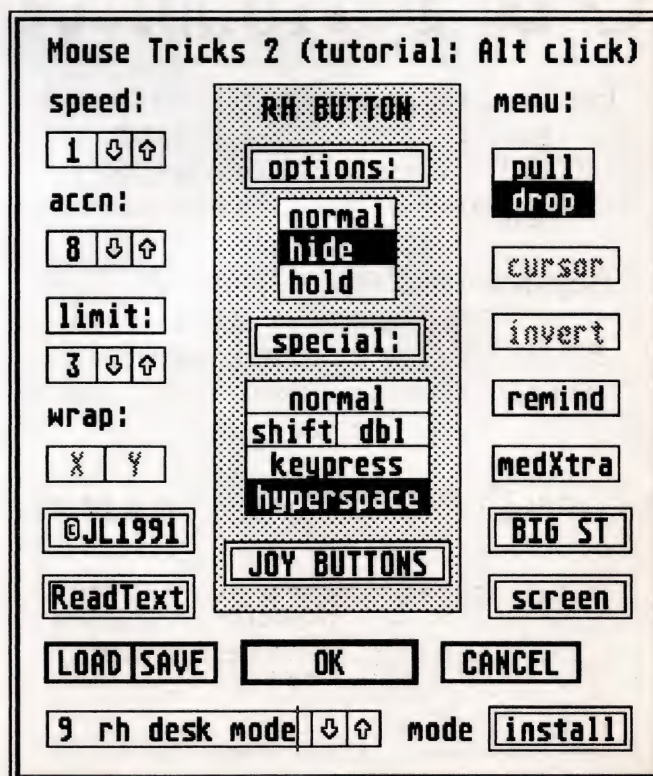
## Adding a serial mouse

The most recent version of Mouse Tricks includes a serial mouse driver; a small AUTO folder program that allows two- and three-button serial mice (such as are used with PC's) to be used with an ST or TT.

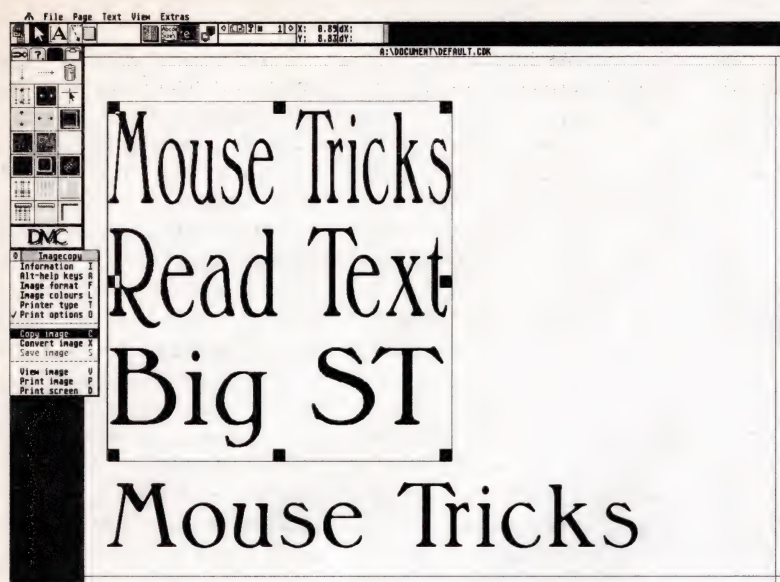
Any ST user with a modem port free (a Mega STE or TT has two serial ports) can attach a serial mouse in this more convenient position: it's both easier to connect, and the mouse lead (which is thinner and more flexible) doesn't trail down in front of the computer.

The serial mouse driver understands mice in both PC and Microsoft modes. In the 3-button PC mouse mode the middle button is used to emulate the up joystick button - which can be used to activate any Mouse Tricks special effect.

The serial mouse can co-exist with a mouse-port mouse, the movements and button states of each being combined together. Tactfully used, this dual mouse control is useful for helping others (especially young children) to learn to use the ST or a new program; both teacher and taught possessing a mouse, rather than exchanging control of a single rodent.







## Stretching Calamus 1.09 - without O-line:

Imagecopy snapshots are reimported into Calamus to replace the original text. Take a wide big screen snapshot of your headline to minimise "jaggies" in the printed output. Imagecopy's IMG compression of plain text will produce surprisingly small file sizes.

Here, three separate text images, having been compressed or stretched to the same width, are handled together within a group frame.

## Hints for using Imagecopy and Calamus:

For images to be loaded into Calamus, switch off Imagecopy's "IMG palette" option. Imagecopy's "screen buffers" option should be active.

Make Calamus' help lines, grid and frames invisible so that the text is drawn onto a clear background.

Screen accelerators Quick ST and Warp 9 crash for screens wider than 1280 pixels - so don't use either for ultra-wide screens. (Disable with a flexible boot-up program such as Superboot, Xboot or Mouseboot3.)

## Miscellaneous Mouse Tricks features:

- \* "Click alert" lets you clear non-decision-making alert boxes (those with just a single button) with a single click - wherever the mouse happens to be.
- \* "DJ reset" enables DeskJet printing when the printer has been switched on after your ST.
- \* In the "screen" dialog box (mainly used for adjusting the screen saver) you can invert the colour of a monochrome display and switch the frame frequency of the colour display to a non-flickering 60Hz.
- \* ST users who've expanded their machine's memory will often be frustrated when the main application keeps possession of almost all the computer's memory - leaving little for the needs of desk accessories such as Read Text or Imagecopy. Just as Mouse Tricks can be asked to install a particular mouse mode when a program runs, it can also restrict the amount of memory available to that program to a specified number of kilobytes. The program then has just what it needs, and desk accessories can flexibly use the rest.

## Big ST

Virtual large screens are a flexible halfway house between the standard ST display and a real (and expensive) large screen monitor. The ST's normal screen acts as a window onto the larger virtual screen behind it. And as you move the mouse near the edge of the ST's screen, a different portion of the virtual large screen scrolls (smoothly and instantly with an STE) into view.

The dimensions of a virtual large screen (unlike the real thing) can be adjusted at boot-up to suit a particular application - portrait or landscape - and anything from a 640\*800 format for interlaced display wordprocessing to a mammoth 2400\*3300 for an A4 300dpi fractal generator.

The single greatest advantage of Big ST over other virtual large screens is that (under orders from Mouse Tricks) it jumps automatically to display most alerts and dialog boxes, returning to its previous position when you've finished with them. A "centre" hyperspace mode is available to

achieve easy jumping to and from those alerts and dialogs that aren't automatically detected.

The main reason for using a virtual large screen is that it provides a much larger unobstructed work area for DTP and drawing packages. You can work on large areas at high magnifications without constant clicking on scroll bars and unnecessary screen redraws.

Large screens also force WYSIWYG DTP, drafting or vector graphics applications to generate high quality screen images that can be captured by Imagecopy (versions 1.3 and above) for use in other programs, or for direct printout.

With a sufficiently large big screen installed, these captured images are large enough to be manipulated and rescaled without significant aliasing (or "jaggies") on the printed output. Images of text can even be reimported back into DTP programs to achieve text effects of which they are not normally capable (see illustration).

At the extreme limit you can

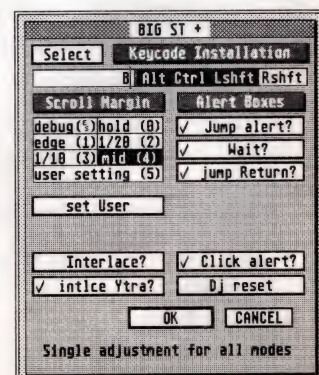
set up a virtual screen large enough to provide a full page of output to your printer (at a particular resolution). This option is currently limited to multi-mega-byte STs by Imagecopy's need for two screen-sized buffers!

Big ST (which now works with both TOS 1.4 machines and STEs) is extremely flexible in configuration and use.

It can set up any feasible screen size, and store a record of four sets of screen dimensions for quick future selection.

You can use the Big ST dialog box or keycodes (for on-the-fly adjustment) to switch to the interlaced display mode (doubling the number of screen lines displayed) or to adjust the size of the scroll margin to suit your immediate needs.

In future versions, other programs will be able to instruct Big ST to display temporary big screens of any chosen size.





# Read Text

Whether wading through countless text files on a PD disk, referring to an on-disk manual, or looking back through your own letters, you'll often want a flexible, fast and accessible tool for reading text files without necessarily changing them.

It's important to be able to use these facilities while working within an application (maybe to look up an on-disk manual or at a few text files relevant to your current work) and to switch back and forth between reading these files

and continuing in your main application in the minimum of time.

Read Text can load and switch between as many as eight text files, and as part of a desk accessory it can hold these in memory as you switch between it and the main application. What it doesn't do yet is to edit text - unlike the desk accessories Harlekin or EdHack - but it makes up for this in its multiple file handling and the speed and accessibility of its text reading functions.

Read Text can be sent messages by other programs - telling it to read a particular file, or find a particular text string in a file. This system is used to both to display text files double-clicked on the

desktop, and in implementing tutorial functions (where another program asks Read Text to display a particular section of an on disk manual).

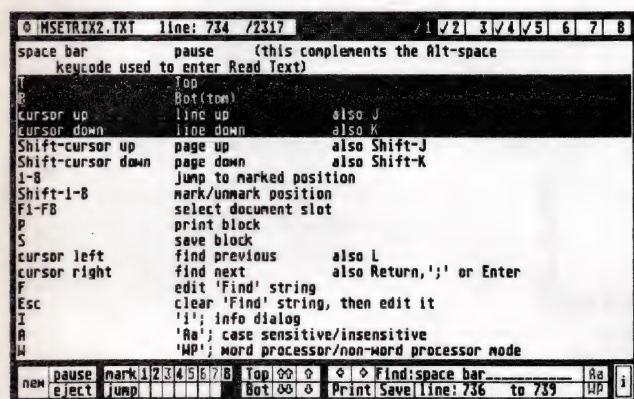
Although part of Mouse Tricks, Read Text can be called up independently via a keycode adjustable by the user, rather than having to access it via the Mouse Tricks dialog box.

Its major functions (document loading, scrolling, searching, block saving and printing, position marking and jumping, and of course entering and leaving Read Text) can be performed as easily from the keyboard as with the mouse, avoiding unnecessary keyboard-mouse hand swapping when

calling it from a text based program.

If you've got enough memory, you can get Read Text to save the main program's screen before it draws its own dialog box over it. On leaving Read Text the old screen is pasted back in an instant, avoiding sometimes lengthy screen redraws.

Although most likely to be faced with plain Ascii text, Read Text can also display some word processor files (Wordplus and Protex), removing control codes before display. It can even achieve conversions between Wordplus and different forms of Ascii file, loading text in one file format and saving in another.



Fitting its role as a dedicated text reader, the current "find string" and the status of each of the marked positions is always displayed. Unassigned "marks" are greyed out and any mark corresponding to the current text position is highlighted. Jumping to a marked position is instantaneous, irrespective of the document length.

The buttons along the top right of the Read Text dialog box are "document slots". Each slot containing a document is ticked, and the slot containing the currently displayed text is highlighted. Clicking on an unoccupied slot calls up the file selector, clicking on a loaded slot switches the display to that document.

If there isn't enough memory to load a document in its entirety, Read Text will let you view it bit by bit.

## Mouse Tricks 2.15

The latest version of Mouse Tricks contains several new features:

- \* New option for right mouse button special effects only on "long" clicks; sharing right button with programs that use it themselves.
- \* Fsel\_rh (in Big ST dialog) is replaced by a "right button normal" in file selector" option (in the right button Options dialog).
- \* Big STE is now Big ST; with support for TOS 1.4 virtual big screens - albeit with a slightly sluggish screen display.
- \* Serial mouse driver allows use of PC serial mouse on the ST. Use middle button of 3 button mouse to trigger a special effect. Serial and mouse-port mouse can co-exist to provide dual mouse control for teaching applications.
- \* A new version of HOT\_MSE.PRg is included for users of Codehead's HotWire.

**Upgrades: Return master disk plus £2.50**

## Latest Versions of Multiprint

### 1.03 Dec 92

For users of Mouse Tricks and The Chameleon™ - Multiprint now de-installs its Mouse Tricks keycodes should it be loaded, then removed, by The Chameleon™. Wait a few seconds for the "de-installation" sound before continuing with any action (such as loading another accessory or running a program).

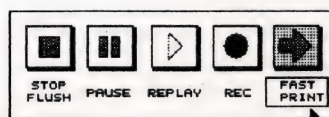
### 1.04 Jan 93

Multiprint can now capture Fontprint BIOS output. (Fontprint is a Fontkit Plus utility that effectively lets you download NI.Q fonts to standard 9 or 24-pin printers.)

A new, more reliable, version of MUL\_GRAB.PRg should be used in place of the one supplied with previous versions of Multiprint.

When not recording or replaying printer data, Multiprint now offers a "FAST PRINT" parallel port output option as an alternative to "NORMAL BUFFER". A third "THRU" option (included for completeness rather than usefulness) passes the printer data on to be handled by the BIOS or installed AUTO programs.

### Using FAST PRINT and MULGRAB.PRg



The FAST PRINT option is selected simply by clicking in the box under the right pointing arrow, which cycles through the three available modes. FAST PRINT is useful whenever your

printer can accept data more quickly than it can be sent via the buffer. Users of non-Atari Laser printers will get a substantial speed increase when printing from PageStream or TimeWorks. Inkjet and high resolution dot matrix printers will also benefit. If selected, the FAST PRINT option will also be used when Multiprint's buffer holds a record but replaying is inactive or paused.

FAST PRINT works (as do similarly named AUTO programs) by providing optimised routines for parallel port output. It does not modify the data sent, it just sends it more quickly.

This contrasts with the shareware desk accessory FASTPRNT.ACC (on the PD Mouse Tricks and Multiprint support disk) which eliminates blank lines from printer data sent to LaserJet and DeskJet printers, and remains valuable (when used in conjunction with MUL\_GRAB.PRg) for minimizing the size of Multiprint printer records.

The use of MUL\_GRAB.PRg allows other resident programs to take a look at BIOS calls before they are handed to Multiprint - which will slow down printing speeds. So use MUL\_GRAB.PRg only when it is needed - i.e. with AUTO programs or desk accessories that modify the printer output produced by other programs.

For maximum speed when using MUL\_GRAB.PRg - place it and the program whose output it grabs to be run as the last two programs in the AUTO folder (using the shareware Mouse Boot 3). If MUL\_GRAB.PRg grabs the output of a desk accessory (such as FASTPRNT.ACC) then place it last in the AUTO folder. Use the shareware Mouse Boot 3 to reorder your AUTO folder.

**Upgrades: Return master disk plus £2.50**



# Desktop Publishing

## with the Atari ST

# D DTP P

### Part Two

Günter Minnerup

**T**he purpose of desktop publishing is printed output.

This seems a very obvious point to make, but behind the seemingly simple requirement of printed output lurk a number of difficult issues which every potential desktop publisher would do well to examine thoroughly before embarking on a specific project, and ideally even before investing in major items of hardware and software. For a start, "printed output" in this context does not mean the end product: the magazine as distributed and sold, the business stationery as stored in the desk drawer, or the price list as received by the customer. For very small printruns, a laser printer may indeed occasionally replace the printshop, but in the vast majority of serious applications a DTP system is concerned with the production of what is known as "camera-ready copy": ready to be photographed by the process camera before the printer's plates are made from the resulting film.

#### Resolution trick

This intermediate step between your computer's output device and the printing press is the source of most headaches in DTP but, provided you understand the basic principles, can also be turned to your advantage in overcoming some of the limitations of your equipment. In most cases, given the exorbitant cost of imagesetters and the insufficient quality of dot matrix printers, the output device directly linked to your computer will be a laser printer with a reso-

lution of 300 dots per inch (dpi). This is quite acceptable for most low-end jobs, but the higher the resolution the better, especially where small text in low point sizes and photographic illustrations are involved, or where good-quality, glossy paper is used. A common trick is to increase the effective output resolution by printing the camera-ready copy (CRCs) on A4 sheets at 300dpi, and then using the camera to reduce the pages to A5 (see screenshot). This trick will only "work" with fairly small page sizes, of course, so for final printing at A4 you are stuck with 300dpi if the CRCs are produced by the laser. You could, in theory, have larger pages printed in A4 sections - this is known as "tiled output" - and then put together again by the process camera but

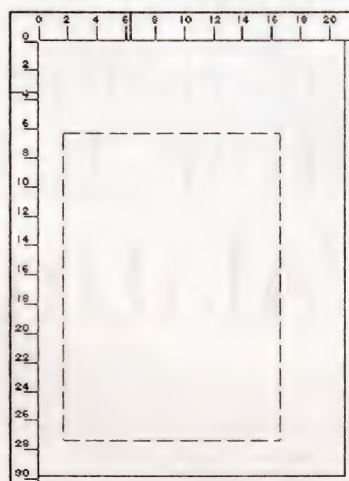
that would be very tedious indeed (although, if your software can handle tiled printing accurately, it offers a reasonable method of proofing large pages which will be sent to another device for final CRC output).

#### What is "quality"?

The iron law of laser printing could therefore be formulated as laser output being OK provided that you do not need pages larger than A4 and you are not too fussy about quality. So how do we define "quality"? Since the difference between what is acceptable and what is not involves subjective judgement, it is only possible to give very general guidance here. An untrained eye may only notice the difference between, say, 12 point text set at 300dpi resolution

on a laser and the same text set at 1270dpi on an imagesetter if they are viewed side-by-side, although for a critically trained eye the laser origins of the former are immediately obvious. Better paper quality, smaller point sizes and more intricate typefaces will all make the difference more readily perceivable. But now that even professional publishing houses, especially in the academic market, are increasingly turning to lasers in order to cut costs, 300dpi output can generally be considered acceptable for most purposes, provided the project does not involve very small point sizes (footnotes, for example) or the extensive use of photographic illustrations.

It is, of course, possible to reproduce scanned photographic images on a laser as long as they are black-and-white ones - process colour separations are really beyond the limited accuracy of laser printers altogether - but even a very untrained eye will spot the shortcomings immediately. Laser dots are simply too coarse to give a convincing illusion of the fine greyscale graduations of photography and can, at best, give you something like 32 different greys with much-reduced detail. Even this may be acceptable with clever use of dithering patterns and tonal adjustments - we shall return to this in a later article in this series - but for quality-critical jobs it is usually better to leave a white space on the CRCs and have the photographs processed separately, or to entrust the whole project to a



△ Although an A4 sheet can be cut in half to produce two A5s, using the trick described in the text does not, as you might assume, double the resolution. If the page orientation remains upright ("portrait"), the real horizontal and vertical proportions are 1:1.414 - derived from the so-called "golden rectangle" - and the effective increase in resolution is therefore from 300dpi to 424dpi. To end up with a 10-point body text font at that enhanced resolution, therefore, you need to work with a font size of 14 points.



high-resolution imagesetter in the first place.

So what if, for one reason or another, laser output is inadequate for your intended purpose and you do not own an imagesetter? Simple: instead of printing to paper you "print" to disk, and send the resulting disk file to an imagesetting bureau. The very same method can be used by those who may be content with laser quality but don't have a laser - again, a commercial bureau or a laser-owning friend can do the job for you. Once again, however, the apparent simplicity of the solution hides a number of potentially tricky complications.

### **Proofing**

The principal benefit, apart from cost reductions, of desktop publishing is that it brings all stages of the design and origination process of camera-ready artwork together in one single computer workstation, giving you total control over all aspects of the page. You see your work on screen and can be confident that, in the words of that much-abused marketing slogan, "what you see is what you get". But in reality this is never quite the case: screen fonts may be different from printer fonts, for example. The screen has a different resolution from a printer and even where the software allows you to zoom into details or even imagesetter resolutions - as Calamus does - your view is reduced to a tiny section of the page.

On top of everything else, software has bugs, and printers have their own particularities and unpredictabilities. There is therefore no substitute for occasionally "proofing" your work to paper.

Ideally, such "proofs" should be made to the same output device that will be used for the CRCs. The differences between laser and imagesetter (or dot matrix and laser) output from the same disk file can be quite dramatic, especially with scanned photographic images. Standard fonts can assume a very different "colour", sometimes even with two different lasers - just compare text set on an HP Laserjet with output from an Atari SLM804, for example. The first difficulty with generating disk files for a remote printer is therefore that you can never be absolutely sure that the final result will be as intended.

### **Disk capacity**

A second problem concerns the limited physical capacities of floppy disks. DTP files tend to be very much larger than wordprocessor files because they contain so much graphical information in addition to the basic ASCII characters. Vector fonts and vector images are relatively economical with disk space, but the inclusion of bit-image data such as GDOS fonts or scanned pictures will very soon generate files which easily exceed the 720k capacity of a standard, double-sided ST disk. Just consider this: an A4 size IMG

file at 300dpi resolution gobbles up a roughly a full megabyte. Every time the resolution is doubled, the file size increases by a factor of four, so the same picture prepared for an imagesetter at 1270dpi would gobble up over 16 megabytes - more than the partition size on most ST hard drives!

Getting your output data to a bureau therefore tends to involve investment in some additional hardware. High-density drives with a capacity of 1.44 megabytes are better than nothing, but the ideal solution are Syquest drives using removable cartridges of 44 megabytes capacity each which can be easily put in the post. Alternatively, a modem will enable you to send the files through the telephone network but this can be fraught with technical difficulties and considerable additional costs unless very fast modems are used at both ends.

### **Software compatibility**

Most importantly, however, your bureau must be able to make sense of the files which you have prepared. This depends crucially on the DTP software you have used. The overwhelming majority of commercial bureaus in the UK are geared towards Apple Macintosh and IBM PC computers and will often never have heard of Atari STs. The only ST-generated files which they will accept are PostScript files - since PostScript is a device-independent page description language, it does not matter

which computer a PostScript file comes from (in theory, anyway). Provided you use a DTP package capable of writing PostScript to disk - and all the common ST programs can do this, with the exception of Calamus - you should be welcomed by the local bureau down the road. As a Calamus user, however, you will be restricted to the handful of Calamus imagesetting bureaus in this country.

Even with PostScript, however, there can be problems. If you have used uncommon fonts and forget to include these with the output file, the returned bromides or film may contain some unpleasant surprises. Or there may be some fault in your PostScript file, either as a result of bug in the output driver or an error on your part: the bureau will not normally be able to correct the mistake because it does not have access to the program which generated the output file. It is therefore important that you produce proofs from the PostScript file before sending it to the bureau, and this can be done with the help of CompoScript, the software PostScript emulator - either to the screen or to an ordinary dot matrix or laser printer. CompoScript also comes in handy for importing "Encapsulated" PostScript clip art files and converting these into the common IMG and TIFF bitmap formats.

**Next month: Page size, page format, page design.**

6 point Palatino Roman

8 point Palatino Roman

10 point Palatino Roman

12 point Palatino Roman

14 point Palatino Roman

18 point Palatino R

This enlargement of Palatino Roman at 300dpi laser resolution shows how the smaller sizes "lose" many of the finer points of the typeface, especially where the serifs join the stems and in the subtle curves of the rounded letters. Note that this is a "hinted" PostScript Type 1 font: unhinted Calamus fonts are even worse below 10 to 12 points.



*Why do some non-program files make sense when you double-click on them to show them on the screen, and not others? Mark Baines explains.*

Characters are stored as bytes. Each byte consists of eight bits and

Text files come in two basic formats - pure, straight ASCII and formatted ASCII. Straight ASCII files contain nothing but text characters from the ASCII character set, generally only within the range 32 to 126. Word

HkXk\*K NrBn "BAPD" PJDfncnd40~1lg, 2-BngS SBEUW "ZiW" =HnHkXk\*K NrBn "BP0D~angS"i SBEW "ZAn  
HkXk\*K NrBn "7AP0D~Bg(i)" SBEW "ZJA, 6N" fHnHkXk\*K NrBn "7vP0DBe SN "Z~n~Bn~Bn" SXHn  
HkXk\*K NrBn "7AP0DfncndS"iBBe SN "LW" fHnHkXk\*K NrBn "7PDH1H1H1RtBn "9UD0n, 2, n, Jg  
aBtCn "9HABeS2Hj1?7eVOnC1w1XnUA" YNC" b(i) fZB0e0AOnUa fZB0H0AOnUt aBjBgUg  
B2B2n "Zt te f8U0nU"  
006J0eC0e "B\*\*k49YL2vI8B0A5A>1Pe5>B>K<" "f5EA" cUN "iHMH0\*7\*7\*?CnAn4BABEN" "H0W?Z/  
B" eC0XU0D5, 6Nu/  
0" e" <An" Jj0g6N "Q" 89Y J0bAnN" Jj0gXc" =HoHo\*7\*7\*?CnAn4BABEN" 80Dn?7/4Z/  
B9YJN "onX0R~89YJN "f0U5, NuW" C0D5Hg YJk" =B(i)Gg" e" (i)GSeG, "E16gRE1g0kFvN "w~W" q" pBf  
"i" r649" BEM "81BAC0N "52pN "B" (J "g" g" Lw>Jeg\*BoS0HnHo?~?~?~CnAn4BABEN" 790n?7/4Z/  
Bn "QX0R0N "Sd" BgB "XZ0" R0W E  
69" "j" v" A3Z0dJ3Zd+3Z  
d" j" j0G "H" "4" eN "S" 4" 6H" oZ2RE1g  
SgDU0UgL "fB" 8Sg "ZiH4HoHoH0rN" 6h0nB/anf:ZBnfZB2Wn "Q" (r  
B\*\* "6j" / PEZ>B0H0A0E; QeBn "BeP0L<Nu/  
On "A" e" b" (j  
N" ), rBfCfH4H0C" e" j  
N" e" f  
P0Uef" oDeM<du5"1"p0/ANn "H" p0BAnN "H3AnC" c0N "BAnCnCN>?1AnC" cXN "6eAN / ? HoN "8U0nAA"  
/CANn "6" =B5E6  
Bj1  
B0N15N, NuW" B0D "f" e" b" (6\*8\*5:50N "4" rBn "tBtBgBgBgBgBgB7B0A5" Bn "30U" a" Ae" B8A4N "30U  
j" 3N" (j" Bf" 02" j" EN" (ZCfCf" HoHoH0C" c" j" 3N" d0NteF" HnH0H0C" c" l" j" EN" B0NteF90  
dP4N0C<dR0g" P0B0/ d=Z/cBj1  
-More-

So why can't TOS recognise what type of files should be displayed and which shouldn't? Well, it can recognise certain file types, for when you double-click on a .PRG, .TOS, .TTP, .APP or .GTP file it doesn't display them but executes them. Part of the answer to

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this is contained in the DESKTOP.INF or NEWDESK.INF file.

In the DESKTOP.INF file there should be lines like this:

```
#F FF 04      @ * * @
#D FF 01      @ * * @
#G 03 FF      * APP @
#G 03 FF      * PRG @
#F 03 04      * TOS @
#P 03 04      * TTP @
```

The #F line determines which icon all the files will have as a default, usually icon number 4, the document icon. This is then modified by the following lines. The #D line determines which icon the folders will have (number 1, a folder icon). The #G lines install the GEM applications giving them a program icon and treating all files with the filename extenders .PRG and .APP as GEM programs. The #F and #P lines do the same for TOS and TOS Takes Parameters programs. There can be additional lines in NEWDESK.INF (for TOS 2, 3 and 4) for GEM Takes Parameters programs and Accessories.

So, when you double-click on a file that has one of these extenders, TOS knows how to treat that file. Any other file is, by default, treated as a document file as determined by the first #F line. When double-clicked on it is not run but shown to the screen. TOS trusts the user to know which files should be displayed and not to click on .RSC files, say.

If you feel very brave, you can edit the DESKTOP.INF file (make a backup copy first) and remove the #G lines, save it to your boot-up disk and re-boot the computer. Now attempt to double-click on a .PRG file! Copy back the original DESKTOP.INF and re-boot to get back to normal.

Because TOS can get into a mess when displaying a non-text file and may even crash, it is always best to view such files in a program that can handle it better. A good text editor like Tempus will attempt most files, most word processors won't. Better still, you need a disk or file editor such as the one I used last month. There are many available, commercial and PD/Shareware but you have to make sure that you don't play with valuable files and always keep a backup. Every time! Programs to look for include HiSoft's KnifeST and PD offerings such as ST Tools, BED and Disk Doctor. I believe that the only way to learn is to investigate yourself, so play about, have a look at the internal structure of files but ALWAYS make backups first!

If you can think of anything that I ought to cover in this column then send me a letter, but please remember that I cannot deal with specific program and hardware problems unless it appears to be of common interest.

8-bit ST ASCII TABLE

000	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015
016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031
032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047
048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063
064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095
096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111
112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Figure 2: The Atari character set. GEM programs can display most of these. TOS and TTP programs sometimes interrupt the codes differently.

Mark S Baines  
Beginners' Forum  
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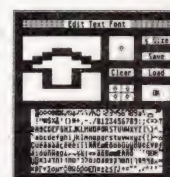
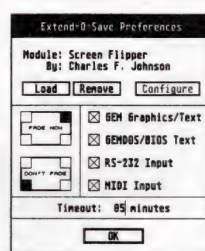
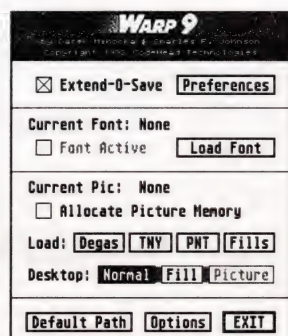
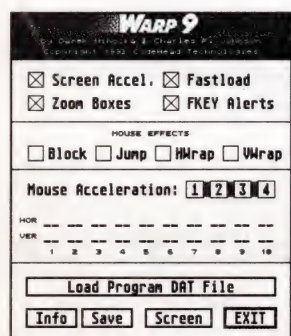
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# Grafix Arts

Paul Keller

## TECHNIQUE – Horizons

An horizon is technically the apparent line that divides the earth and the sky. It is most often to be found in landscape pictures which contain these two features of earth and sky. The term horizon can also be extended to our computer pictures such as those found in our 3D ray-tracing packages. These sometimes use a horizon to give depth to the universe therein created, as well as the varying contrast level effects. We take a look at both types, as both are very much applicable to the computer graphic artists working knowledge and experience.

### Landscape scenes

This being an extensive area of scenery as viewed from a single aspect, such as the top or bottom of a hill. The point of view (aspect) determines largely the type of scene found in the picture you are drawing and by this it effects the picture perspective also. The drawing or painting of any outdoor landscape pictures are also dependent on the time of day and any climatic conditions prevalent at the time. It is these factors which chiefly effect the creation of your picture horizon.

For daytime landscape scenery a very light contrast colour palette is used for background while a stronger contrast for foreground scenery is preferable. This combination would therefore be from dark to light, lightest colour hills towards the horizon. Also an important aspect of this gradual contrast shift is the change of any hill colours the nearer you get to the horizon. The interesting

looking light blue you get from atmospheric conditions closer to the horizon effects the hills or trees in that area.

Some computer artists will use a light violet in place of this blue or even better a combination of both palette colours for the landscape area closest to, and forming a part of that horizon.

The sky in relation to this is of a lighter blue to the horizon while of a darker blue the higher the altitude.

The way to take best advantage of drawing any landscape pictures on your computer is to use an extended paint palette programme such as Spectrum 512 for all STFM owners or Canvas (4,096 colour palette) for STE users.

Of these two, my preference is Canvas, that is at least for landscape pictures as the more shades of colour it offers can make a huge difference. A larger colour range means better colour integration, and that means more lifelike pictures. The different bands of palette have to be set up before starting your picture and so planning is essential.

Also the different approach it uses to Spectrum 512 for displaying colours takes a while to get used to!

But I have found it is definitely worth the effort as to the effects you can create, e.g. a maximum of 800 colours from 4,096 in anyone picture.

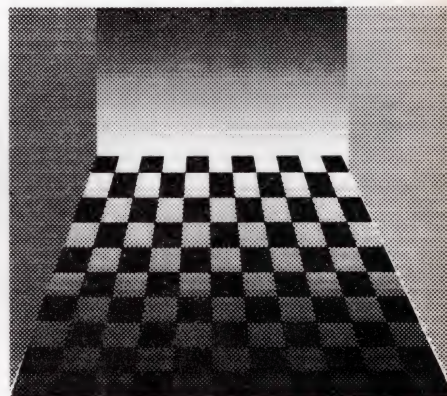
In practise though, owing to the need of integrating the colour palettes between each of the palette bands you create you will per-

haps find on average you only gain 6 extra colours from each band. There are 50 (maximum) of these bands available and these each being 4 pixels high with a maximum of 16 colours in each band. (50x16=800 colours)(see picture one).

### Ray tracing

The horizons found in ST ray tracing programmes tend to be a striking contrast to that of those found in landscape scenes. While still dependent on light conditions the horizon itself tends to be simply a flat tile floor and black sky affair.

The effect of the horizon is still effective though as it isn't intended to take away to much emphasis from any foreground objects.



The above picture shows a typical horizon from a raytraced room.

### Fractals

I have to mention these as they can be of great use to the computer artist; they are not all useless pretty patterns.

The main advantage is in their use is for the creation of flora, like trees and also mountains. With an advanced fractal landscape programme you could build up a mountain in minutes which to draw would take hours! So bear in mind that if you wanted something like this for your horizon quickly. A snapshot programme can be used to grab the picture you best like from any landscape fractal programme.

Such programmes as mentioned can be bought from the ST CLUB for very little outlay.



### BRIDGE

The picture on the left I drew up with Canvas using 6-colour palette bands. It contained about 60 different colours on screen at one time and was created on an STM computer with a 512 colour global palette.

Next month: Reflections



## TOOLS – Lines

### Types of Line

The ordinary line is drawn between two sets of points created with the mouse. These lines are best suited for using in any picture with a lot of straight-edged objects contained within them, such as grids and colour bands.

'K-lines' or connected lines are even better for the drawing of buildings and such like. They are drawn in the same way as normal lines except that each new line starts at the point where the old one finished. I find the K-line best for drawing outlines, as generally it is much faster and more accurate for this work than a 'line' or even 'draw' command. The ability of its rubber-band-like quality to swing the line and test

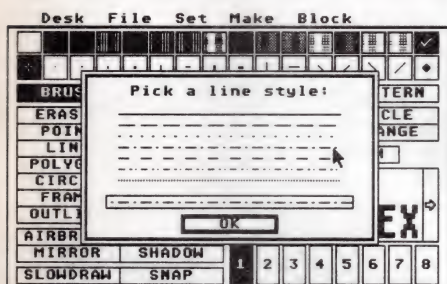
the angle of that line before placing it down on the screen is the deciding factor for me. 'Rays' are straight lines that have the same central starting point and are drawn out from this. They can be swung around this centre and placed down by clicking with the mouse. (These were covered in issue 26.) These, then, are the three types of line generally available in all your ST art packages. They can be used as a pattern as well as normally - the patterns available can be seen below - and are the same used for each line. These patterns are useful for showing different aspects of a drawing in the similar way that they are used for technical drawings, especially useful if you are only drawing in black and white monochrome.

If you ever use medium resolution a lot you may find the much thicker horizontal lines can be greatly reduced by using the 50% line pattern for these lines. Although it is not really finer it looks so, and this illusion can be used to good effect in most circumstances for this resolution, except were much filling in of outlines are needed! The use of a 'grid lock' with the line command is very useful for any 3D constructions such as cubes or when you need to create something with the

same angles eg. an isometric picture view. Such a grid lock command places your mouse points to the closest intersection to that available on your grid; it makes any lining up work a lot easier and quicker.

Lines can be used for advanced colour-band colouring, this is where the horizontal lines are to be best taken advantage of in any extra colour programmes such as 'Quantum Paint' or even better 'Canvas' art packages.

Such lines are simply used in the way a gradient horizon might be seen by the gradual layering of each colour over a range from dark to light. The effects of this can be astounding and yet simple when you get used to the different method of drawing by using any such colour band programmes. (This will be covered, as promised, in a latter issue.)



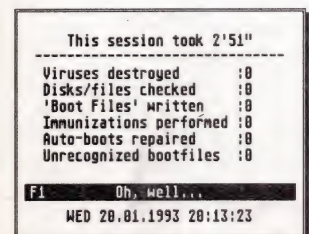
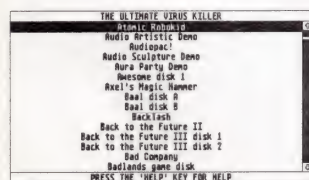
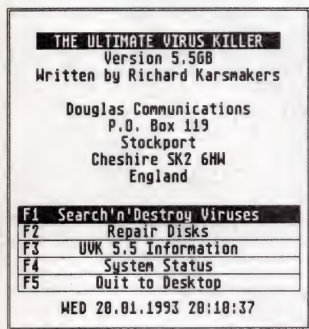
### LAST WORDS

*"As a well spent day brings happy sleep,  
so a life well used brings happy death."*

Leonardo da Vinci

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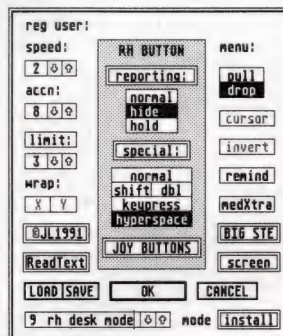
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# Superbase Personal

## Tutorial - Part Three

### Searching For Records

*After constructing a database last month, Mark Baines now puts it to some use.*

If you are following this tutorial in earnest then I hope that have got hold of the database files from the disk magazine DMG.33. The next two articles will require this file or the completion of your own.

The whole point of making a database file is to retrieve data from it at a later date.

#### Key Lookup Button

If you know the particular value of an indexed field you can use this option for a quick search. In our example file, the default index field is Issue No. Let us say that you wanted to look at records for Issue No 5. Click on the Key Lookup button and type 5 and press Return.

The first record for issue 5 is displayed. Go to the Set menu and click on the Table view item or press Alt-T. That same record is at the top with the fields arranged across the screen with entries beneath. Now make sure that you have Paging on under the Set menu. This will cause Superbase to stop after every page of details rather than scrolling off to the end. Click on the Fast Forward button

and you will get a screen full of issue 5 records.

The Pause button will be selected and you can continue by either clicking on it or the Fast Forward button again. Eventually you will start to see entries for issue 6. What the Key Lookup field has done is to take you to the first entry of the current indexed field matching your criteria and allowed the records to continue in order thereafter. It does not select issue 5 records only for display.

Even though the mouse cursor is a busy bee icon, it can still be used to scroll sideways to see more of the fields. Click on the scroll bar to see the fields to the right. Click on the Stop button. The screen will clear.

You may want to display records of articles by Günter Minnerup, say, but this is a different index field from that currently open. The index field can be changed by using the Open index item in the Project menu. Click on Article Author and then OK.

Check that the window title bar confirms the index field opened. Now click on the Key Lookup but-

ton and type minnerup. You will get a warning message:

For your information  
minnerup  
No record with this key

That's right, the correct field value is "Minnerup, Gunter" but Superbase does a good job of trying to match the search criteria and does, indeed, find what we wanted. This demonstrates some of Superbase's flexibility and intelligence. Again, click on Fast Forward to see the rest of the records. Notice that they are not in any particular order. The Key Lookup feature can only deal with one indexed field at a time.

#### The Filter

For greater control we require the Filter option. This is a powerful and indispensable function if you want to search and select out certain records matching more specific criteria than the Key Lookup function can offer. More than one field can be used and it is particularly useful if you only have a vague idea of what the search criteria should be or if the criteria is very broad. This is made possible by the LIKE operator which will match on upper or lower case letters and the wildcard and other pattern matching characters which enable sophisticated searches to be made of the smallest of details.

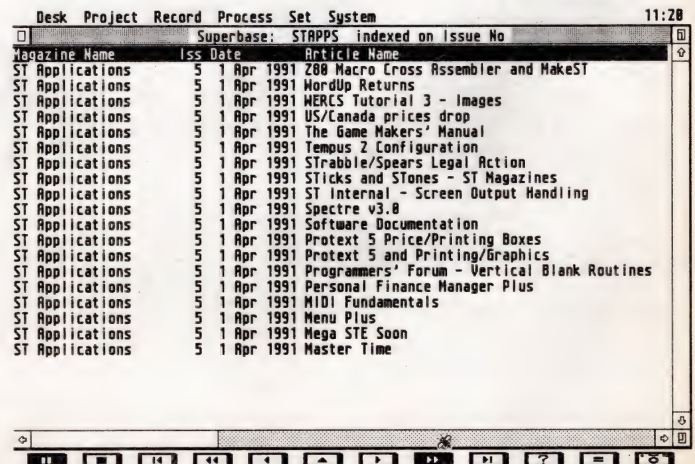
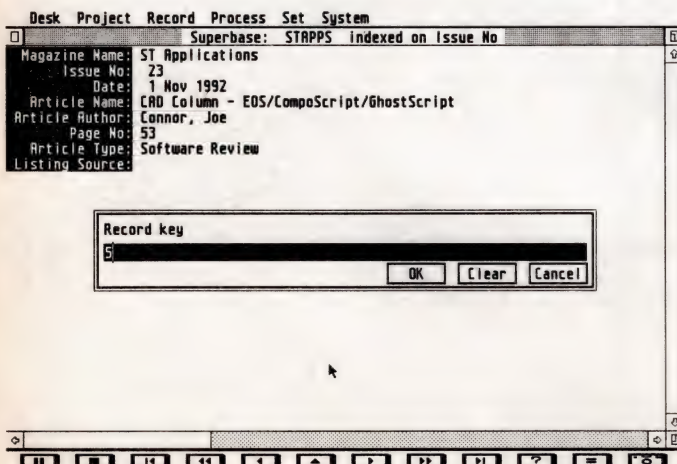
Put the Issue No field back as the indexed field by selecting Open index from the Project menu and clicking on Issue No. Click on the Filter button.

The appearance of this dialog intimidates most new users but it is essentially a simple one to operate once the principles are learnt. Space doesn't allow me to go into great detail on all the aspects of its features. The relevant section in

the manual "The Filter Button" 1-19 should be referred to. If you are familiar with a programming language and/or computer arithmetic, then all of the buttons except LIKE will be recognizable to you. The relational operators, = < > > etc. are straightforward as are the mathematical operators + - \* /. The most important ones are the logical operators AND, OR and NOT. These are used to link expressions and their meaning is not too dissimilar to that in ordinary English. If you say out loud what you want the filter to search for, you will invariably use the words 'and', 'or', and 'not'. The LIKE operator is special. It matches upper and lower case letters so that "sticks" can be used to find "STicks". LIKE can also be used with pattern-matching characters so that "\*falcon\*" will match the word "Falcon" in any place within the relevant field. Appendix B of the manual "The LIKE Operator" needs to be read carefully and thoroughly experimented with to gain experience.

You can type directly into the main input line at the bottom or click on the relevant fields and operator buttons and enter values into the Value input line as necessary. OK, let's do something. What have we got on the Falcon? First we need to decide on the field which will contain the word "Falcon". In English we want the Filter to do something like "Display those records where the Article Name field contains the word Falcon". Notice that we do not want "Article Name field to equal Falcon" as this will only search for those field values where the word "Falcon" is the full entry and not where it exists with other words. So the wildcard character \* will apply here, something like:

Article Name = "\*Falcon\*"





But this won't do as the = operator is precise in its operation. It will search for the exact string of characters "\*Falcon\*", that is, "asterisk Falcon asterisk". The pattern matching characters can only be used with the LIKE operator. Click on the Article Name field and it should appear in the main input line. Now click on the LIKE operator button and then the Value input line to activate it. A vertical line cursor should appear. Type in \*falcon\*: the case doesn't matter. Then press Return to place this value into the main input line.

If you make a mistake then click on the Clear button and start again. You can edit the main input line by clicking on it to display the cursor. Unfortunately, Superbase can get very confused at times and will not accept any input. This is often overcome by deleting the last operator or entry and clicking on the relevant buttons again. Click on OK and after some disk activity the first record is displayed. As we are still in Table view, click on Fast Forward to see the rest of the records that match the Filter. There should be four records.

Complex searches can be done on more than one field. Let's say that we are interested in all the articles David Smith wrote in 1992 but not those about Redacteur. That would translate into something like "Article Author is David Smith and Date is 1992 but not Article Name like Redacteur"

Article Author = "Smith, David" AND Date > 1/12/91 AND Date < 1/1/93 AND NOT (Article Name LIKE "\*redacteur\*")

Note that the Article Name expression has to equal "Smith, David" and that the LIKE operator is not used because we want an

exact match in this field. The AND operator is used to link this expression with the ones concerning the Date field because we want both expressions to be true. The two Date expressions look for dates greater than 1st Dec 1991 and less than 1st Jan 1993, i.e. dates in 1992. Appendix C, although poorly explained, contains various functions to do some things more easily. The YEAR(date field) function will return the numeric value of the year designated by the date field. So instead of

AND Date > 1/12/91 AND Date < 1/1/93

we can have

AND YEAR(Date) = 1992

Click on the Filter button twice to call it up and then on Clear. Click on Article Author field and then the = operator. In the Value input line type Smith, David and press Return. Next click on the AND operator and then on the main input line to display the cursor. With the cursor at the end after AND type a space and YEAR(Date) = and then click on the Value input line and type in 1992 and press Return. Click on the AND and the NOT operators. The next expression has to go into parentheses because the NOT operator applies to the whole of it and not just the first part which is the field name. Click on ( then the Article Name field, then LIKE and in the Value input line enter \*redacteur\*. Press Return and click on the ) button to finish. This expression will look for the word "redacteur" in the Article Name field and not include it in the final list of selected records. Click on OK and then the Fast Forward button to see that there are two records found from issues 21 and 23.

How was that? Another search? What software and hardware reviews did Joe Connor and

Mark Baines write? Here we have two fields of concern, the Article Type field and the Article Author field. The Article Type must be "Software Review" or "Hardware Review" to give the expression

Article Type = "Software Review" OR Article Type = "Hardware Review"

However, as no other Article Type value has the word "Review" we could more easily write the expression

Article Type LIKE "\*review" meaning that the Filter should look for the word "review" at the end of the field value. Next, we want those Article Types to be written only by "Baines, Mark" or "Connor, Joe". This gives the expression Article Author = "Baines, Mark" OR Article Author = "Connor, Joe"

This is joined to the previous expression with the AND operator. Notice that each value we want to search for has to be linked to the appropriate field name - you can't cut corners with

Article Author = "Baines, Mark" OR "Connor, Joe"

Enter the total expression Article Type LIKE "\*review" AND Article Author = "Baines, Mark" OR Article Author = "Connor, Joe"

into the main input line either by typing it in or clicking on the relevant buttons.

When finished, click on OK and Fast Forward. If you scroll to the right to look at the Article Type column you will see that they contain types other than "Hardware Review" and "Software Review". The Authors are correct, however. What went wrong? Well, the search criteria has three expressions linked together with an AND and an OR operator. The first expression is being linked to the second to expli-

citly give all Article Types with "review" at the end of the field AND where the Author is "Baines, Mark". The third expression is tacked onto the end separate from the first two so that it is interpreted as meaning "and anything else by Joe Connor" hence the other Article Types by him. What we meant was to link BOTH Article Author expressions to the Article Type expression. We can do this by placing parentheses around them to give

Article Type LIKE "\*review" AND (Article Author = "Baines, Mark" OR Article Author = "Connor, Joe")

Now try this by editing the main input line of the Filter dialog. You should now get a long list of records containing articles from their respective regular columns as well as other articles. Can we exclude these so that we just get the non-regular articles? The NOT operator comes to mind again. We want the above expression with this expression on the end

AND NOT(Article Name LIKE "Going On-Line\*" OR Article Name LIKE "CAD Column\*")

This excludes the articles from the authors' regular columns. Add that to the current Filter dialog expression. It should result in 17 records.

I hope you can now see what a powerful function the Filter is. It takes time to master and only experimentation can achieve that. Try out some expressions and attempt to hone down the resulting list of records as in the example above. The Filter function is the key to Superbase and is used in other features and so is worth persevering with.

Next month, Query Reports.

Desk	Project	Record	Process	Set	System
Superbase: STAPPS indexed on Issue No					
Magazine Name	Iss	Date	Article Name		
ST Applications	19	1 Jul 1992	Falcon and other Atari News		
ST Applications	22	1 Oct 1992	Atari's Falcon830		
ST Applications	23	1 Nov 1992	Atari News - Falcon830		
ST Applications	23	1 Nov 1992	STicks and STones - Falling Pound and the Falc		



# UPDATE

Version 13.1 ~ April 1993

## Applications

UTL311: B.Ware Software Shareware and Demo Compilation: Play Spell, Penguin, Play Maths, Super Card 2.52.

## Clip Art

SSM.66: Music and Drama in 400-dpi IMG files: Files are: CORNET, FLUGEL, BARI-TONE and TROMBONE (brass band); FLUTE logo; SAX; CONSOLE (Wurlitzer as seen by the organists); GRAMFONE (wind up without dog); BASS and TREBLE CLEFS; STAGE (stylised drawing of stage curtains, drapes etc.); MASK - masks of Tragedy and Comedy; PIANIST - female accompanist.

## Communications Utilities

COM.53: Ultimate Morse Tutorial: Collection of comprehensive morse tutorial programs. (C)

## Compilation Disks

CMP.09: Atari Interface Magazine Disk of the Month (October 1992): 24\_BITS - picture viewer that displays 29,791 colors on an STE or 3,375 colors on an STi with no hardware modification! Supports RAW (CrackArt), RAM or IBM 24-bit Targa file formats. Cops 'n' Robbers - 2-player low rez arcade game in which one player (in the police car) tries to catch the other (in the getaway car) to prove that crime doesn't pay. Icon Juggler 1.2 allows you to create your own customized DESKICON.RSC files for TOS 2.06 and above. Reads NeoDesk and DC Desktop icon files. PAULA 2.0D - plays all those great .MOD sound files from the Amiga. Gives you great control over the sound. PGS2.2 REF - PageStream 2.2 document updating the Quick Reference Card

from Soft-Logik to reflect the changes in PGS 2.2. ROOTSDM.APP -- A demo version of Family Roots, an excellent genealogy program from the UK. Runs in all ST/TT resolutions. SEBRA - Monochrome emulator with many features including the ability to switch between screens. Works with everything including PageStream, Calamus, Retouche Pro, etc. ST TAR - de/compression utilities to create or uncompress files in the UNIX .TAR format. If you do a lot of Internetting or work on UNIX systems, you NEED these utilities. TODAY - Today in History for Michtron BBS 3.0. Contains source file and data files for each month. ZEST KENO - lets you play and analyze hundreds of Keno games in a very short time. Test your favourite numbers and try out custom number combinations (M).

CMP.10: Atari Interface Magazine Disk of the Month (September 1992): ALPHA - The Name Generator. Creates a list of names, thousands of them! Use your own custom parameters (M). PHOTOCHROME - emulates a colour board on any Atari ST or STE. Load most IFF formats, 24-Bit QRT and REAL-3D Ray-traced screens (16 million colours) and VidiChrome digitized 'RGB' colour separations (4096 colours) (C). CRACKLDW - cracks the password protection used by LDW Power to secure your spreadsheet files. DATA LOPE 1.1 - combines an addressing database with a flexible envelope printing program for the HP DeskJet. Can import CardFile .DAT files. FASTBASE - Shareware relational database package with a number of very powerful features and an excellent user interface. G\_MAP - Presents a graphic map of the data on your hard drive. Lets you know how fragmented your data is, and if de-fragmenting would be

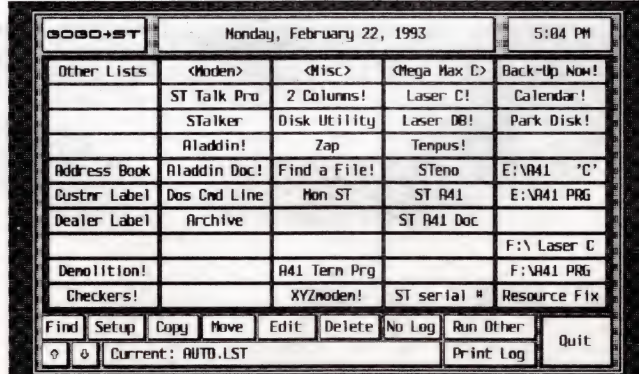
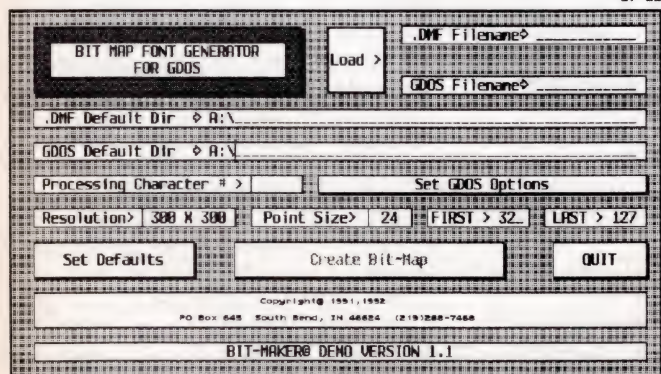
useful. KRASK - (Russian for colour) is a full-featured fractal graphics generator that's fast and has lots of options. MACREAD - transfers Macintosh files from Mac HFS SCSI disks to the ST. MATHFACT - maths worksheet generator for grades 1-9. Very useful for teachers who wish to generate math tests and review worksheets. MORSE - Morse Code trainer, configurable in terms of speed, tone and practice contents. Can also translate any file into Morse Code. SCRLFIX - Fixes the double-click scroll bug in all versions of TOS since 1.4. Assembly source code included. WINEMAKE - A wine making database, containing several recipes and other info needed for the production of wine (M).

CMP.11: ST Informer Disk August 1992: ASTROCALC - astrology program that can draw a birth chart and do a spot of interpretation. An interesting and very detailed program. BOOK DATABASE One - version 3 - Keep track of up to 2000 titles with this all-Gem, easy-to-use freeware program. DATA-LOPE v1.1 - combines an addressing database with a very flexible envelope printing program. Data-Lope uses the internal fonts and font characteristics of the DeskJet. ECOPY - copies a file that is larger than a floppy disk to a number of disks. EDM Shell 2.24 a powerful, easy-to-use archive shell which works with ARC, LZH (both lh1 and lh5), ZIP, and ZOO. E\_PR5.APP - Paper, Rock, and Scissors game (C). FLASHDISK - reset-proof, fast RAM disk that will let you load files from a folder into the RAM disk. GEMvelope demo - the envelope printer - fully functional except that you cannot Load or Save addresses and setups. INFORMER - a desk accessory/program that displays: a capslock indicator, free RAM,

17:22

GoGoDesk Menus!

17:04



CMP.12



time, drive access, or mouse x/y position on the GEM menu bar. LABEL IT v2.0 - produces custom labels for 3.5" disks. Designed to use tractor-fed labels on Epson 9 and 24 pin compatibles. LZH 2.01L by Thomas Quester - supports both Level 1 and Level 5 LHARC files. MEMORY SETTER v3.2 - allows you to set how much memory your ST thinks it has. RECIPE31 - database dedicated to the storage, retrieval and printing of recipes. Can print in ASCII, NX-1000 or GDOS formats.

CMP.12: ST Informer Disk September 1992: A LPHONE - converts digit telephone numbers to words. ASCII2WW - converts ASCII text to WordWriter format. CBM\_DEMO - Demo version of Cyberdrome, the Hoverjet Simulator - real time realism flight simulation and arcade action combined with a dungeon type game (C:1Meg). CHCKBOOK - latest version of this popular checkbook program. ELFDemo - demo version of ELFBOOT v1.32 - goes in the AUTO folder and enables the users to control the booting configuration. GOGO ST v5.0 - very polished program launcher - with a single click of your mouse you can launch one of 50 programs that can be pre-programmed into each screen. GRAPH243 - creates many different types of graphs: Hi-Lo, Pie, Bar, Bubble graphs, opposed bars, Polar plots, 3D, and multiple variable charts are possible. HELPGDOS - text file, that clearly explains the methods necessary to install FONTGDOS, the new GDOS replacement from Atari. BITMAKER and MEGAKERN - demo versions - functional without save. MegaKern can kern PageStream DMF fonts and type 1 fonts. BitMaker creates screen fonts in DMF and AFB format for PageStream. MultiDesk Deluxe demo - overcomes the limit of six desk accessories. The Deluxe version lets you load and unload desk accessory at any time. It even lets you treat ordinary ST desk accessories as if they were CPX modules for Atari's Extensible Control Panel. PHOTOCHROME v2.01 - graphics card emulator - can load most IFF formats, 24 bit QRT and REAL 3D Raytraced screens (16 million colours) and VidiChrome digitised RGB colour separations. S DRAW - drawing program very similar to Degas (M). SPIDER v2.0 - double deck solitaire game. Good graphics and interface add to the games enjoyment (C). SYSTEM - displays many system parameters, including ram space, disk space, HD space, GDOS, Blitter, etc. TIMECARD - keeps track of work spent on projects. TUZZLE11 - tile

puzzle.

### Educational Software

**EDU.39: Mini Magic Story Book** - versatile interactive package for children of all ages! Can be used to create illustrated stories, cartoons or animated models, which can be brought to life with easy animation and sound effects. (C)

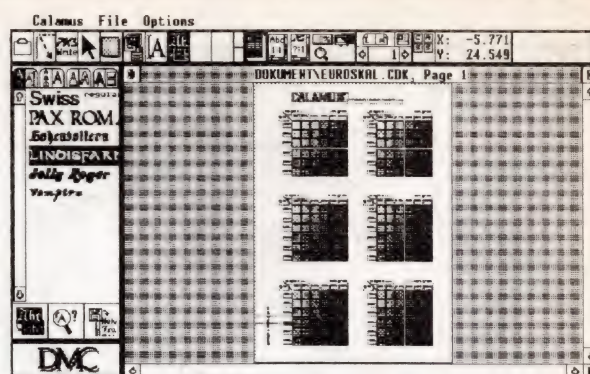
**EDU.40: Let's Spell First Five Hundred Words** - introductory version. This programme is a fully playable spelling program with approximately 100 words in English and French for children to spell. (C)

### Fonts

**FON.135 and FON.136: Fonts for Ghostscript:** Avant Garde, Bookman, Charter, Courier, Helvetica, New Century Schoolbook, Palatino, Symbol, Times, Zapf Chancery, Zapf Dingbats, Hershey Gothic English, Hershey Gothic Italian, Hershey Gothic German, Hershey Greek, Hershey Plain, Hershey Script, and Hershey Symbol.

**FON.137: Calamus Fonts by Ikon Graphics:** Mainly decorative faces with a liberal sprinkling of calligraphic style fonts. 'Iona' and 'Lindisfarne' - based on scripts in the early mediaeval Book of Kells, 'Pax Romana' is a Roman majuscule resembling stone-cut letters. 'Quo Vadis' is based on uncial letters from Christian sources. Other uncial fonts are 'Biblos' and 'Sol Invictus'. 'Parable' and 'Trojan' are based on very early Roman and Greek. 'Vampire' is a dramatic and highly individual modern form of gothic cursive. 'Otranto' is a narrow gothic-italic cross. Two mediaeval style fonts are included; a 16th century Fraktur face called 'Hohenzollern'. 'Bradley' is a late Victorian 'gothick'. That old Art Nouveau favourite 'Bocklin'. 'Legend' has a very Arabian feel to it, whilst 'Hobo' is Art Deco-ish. 'Tubby' is well...tubby and 'Stop Gap' has gaps in it and is somewhat futuristic. 'Boxville' is a Wild West face and in 'Jolly Roger' the letters have deeply curved ascenders and descenders, reminiscent of cutlass blades.

**FON.138: Calamus Fonts:** Ad\_makci, Ad\_maker, Ad\_mak\_c, Albat, Andromed, Berlgo, Berlgo\_i, Berlingo, Cartoon, Cart\_ita, Edingo, Eding\_uc, Gile\_xbi, Gille\_xb, Horta\_i, Logotype, Maitres, Milou, Milou\_c, and Pentel.



Control and Cyber Paint. Futureworlds VI comprises seven films of animated alien architecture.

**GRA.158: GEMView 2.01:** New Features include: Support for GIF 89a Images, HAM - Hold & Modify images \*.IFF, PC Paintbrush PCX, and BMP (MS-Windows Bitmap); Conversion of color-images to (X)IMG in every screen-resolution; loads IFF-color-Images with 256 colors; Free scaling of Metafiles; New redraw-routine for Metafiles and raster-images; Loads 1stWord documents; Can be used as a picture & file-show for Multi-TOS with support for Multiple-Argument -> Multi-Window or Slideshow.

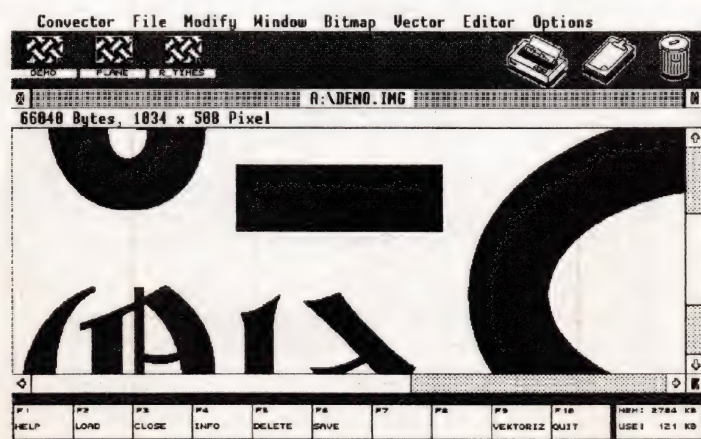
**GRA.159: Convector Professional Demo** - comprehensive auto-tracing package. Fully functional demo with all facilities except save, which would include: AOB, CVR, GEM, GEM/3, CVG, VEK, EPS, or as Calamus font folder. (M)

**GRA.160: Graphic Formats 1:** GIF - Compuserve's explanation of GIF; LZWEXP - Explanation of the LZW compression algorithm; Plus Turbo Pascal 4 sources and MS DOS executables for: extracting GIF images, creating GIF images and a GIF viewer that utilizes the VGA 256-color mode. CJPEG - C source files to compress an image file to a JPEG/JFIF file. The currently supported image file formats are: PPM (PBMPLUS colorformat), PGM (PBMPLUS gray-scale format), GIF, Targa, and RLE (Utah Raster Toolkit format). DJPEG - C source files for decompressing a JPEG file to an image file. TIFF - definition of the TIFF file format.

**GRA.161: Graphic Formats 2:** The Independent JPEG Group's JPEG software. This distribution contains C software to implement JPEG image compression and decompression. JPEG (pronounced "jay-peg") is a standardized compression method for full-color and gray-scale images. JPEG is intended for "real-world" scenes; cartoons and other non-realistic images are not its strong suit. JPEG is lossy, meaning that the output image is not necessarily identical to the input image. However, on typical images of real-world scenes, very good compression levels can be obtained with no visible change, and amazingly high compression levels can be obtained if you can tolerate a low-quality image. This software can be used on several levels: as canned software for JPEG compression and decompression, as the basis for other JPEG programs, and as a toolkit for experimentation with JPEG and JPEG-like algorithms. C Source codes only on this disk.

### Graphics

**G R A . 1 5 7 :** Futuretime IV: ALIEN ARCHITECTURE by Neil G. Donnan. The latest cyclic films in the Futureworlds series. As in Futureworlds I-V, they have been created using Cyber Sculpt, CAD 3D2, Cyber





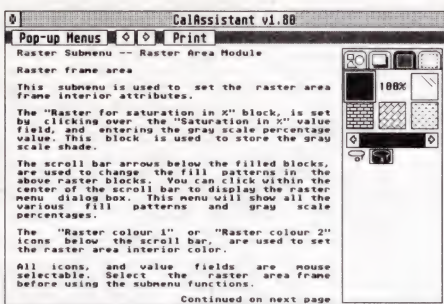
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# X-Debug

Advanced Debugger for Atari ST/TT computers

X-Debug is an advanced debugger for the Atari range of computers. It is both a low-level debugger, showing memory dumps and register contents, and also a medium-level debugger, understanding about certain high-level languages and allowing source display single-step, and local variable access, for example.

The best support is for Lattice C, as that is the only compiled language that outputs full debug information, but it also supports line-number debug (as created by HiSoft Basic and Devpac 3), and symbol-only debug (usable with virtually all ST compilers).

Crucial to the whole debugger is the X-Debug language. This is a simple yet powerful script type language that allows complex operations to be built up from a sequence of standard operations. It supports a full expression evaluator, aliases, and procedures with parameters. It is also an important factor in customising the user interface, allowing specific commands to be attached to particular keypresses.

X-Debug runs on STs and TTs with any monitor type. One megabyte of RAM is recommended, and TOS 1.4 or later avoids problems with larger programs. Written by Andy Pennell, the creator of MonST.

**£24.95**

**The ST Club**  
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Nottingham  
NG1 1PS

```

1 68030 Registers:
00:00000000 A0:00000000
01:00000000 A1:00000000
02:00000000 A2:00000000
03:00000000 A3:00000000
04:00000000 A4:00000000
05:00000000 A5:00000000
06:00000000 A6:00000000
07:00000000 A7:00000000
SR:00000000 D10 xnzvc
PC:00000000 A7:00000000
move.w #52700, sr
#2700

2 Disassembly PC
e00020> move.w #52700, sr
e00024> reset
e00028> cmpi.l #5fa52235f, $ra0000
e0002c> bne.s $e0004c
e00030> lea $e0004c(pc), a6
e00034> jmp $ra0004
e00038> move.l $e0004c, d0
e0003c> movec d0, cacr
e00040> moveq #0, d0
e00044> movec d0, vbr
e00048> move.l $e0004c, tc
e0004c> move.l $e0004c, tlb
e00050> bsr $e0004c, tlb
e00054> beq.s $e000a8
e00058> lea $e000a8(pc), a6
e0005c> bra $e000fe
e00060> bne.s $e000a8
e00064> move.b $a24.w, $ffff0001.w

```

```

1 68030 Registers:
00:0100133A A0:00000000
01:0100B970 A1:00000000
02:00000000 A2:0100B970
03:00000000 A3:0100B970
04:00000000 A4:01117654
05:00000000 A5:0111386E
06:00000000 A6:01113750
07:00000000 A7:01113690
SR:2304 D10 xnzvc
PC:0100B970 A7:01117644
jsr -init_diss
$10f17ee 41FA FF02

2 non.c
1282: /# zoom (or unzoom) a window #/
1283: word zoom_window(word num)
1284:
1285:
1286: word x, y, w, h;
1287: struct ws *wptr;
1288: word err;
1289: word w;
1290:
1291: wptr=wlist(num);
1292: if (wptr->type==WTYPE_DEAD)
1293: return 0;
1294: if (wptr->zoomed==FALSE)
1295: {
1296: wptr->zoom=wptr->x; wptr->zoomwptr-
1297: wptr->zoomwptr-w; wptr->ohwptr-
1298: w;
1299: if (wptr->type==WTYPE_MENU)

```

```

1 68030 Registers:
00:0100133A A0:00000000
01:0100B970 A1:00000000
02:00000000 A2:0100B970
03:00000000 A3:0100B970
04:00000000 A4:01117654
05:00000000 A5:0111386E
06:00000000 A6:01113750
07:00000000 A7:01113690
SR:2304 D10 xnzvc
PC:0100B970 A7:01117644
jsr -init_diss
$10f17ee 41FA FF02

2 non.c
1000b0 bsr -init_windows
1793: init_proc();
1000b4 jsr -init_proc
1794: init_symbols();
1000b8 jsr -init_symbols
1795: init_exceptions();
1000bc jsr -init_exceptions
1796: init_diss();
1000c0 jsr -init_diss
1797: init_mach2(default_diss, &default_d1
1000c4 pea -5(a6)
1798: -0(a6)
1000c8 jsr -init_mach2
1799: init_source();
1000cc lea $10(a7), a7
1795:
1000d0 res=open_window(1,0,0,38,14,NULL,WTY
1000d4 moveq #0, d0

```



DESK FILE FORMAT OPTIONS TEXT PRINT

## FINAL SCORE

Version 2.0

© Mainstream Music 1992

Quality score writing at an affordable price

Chopin - Study No. 5 in E minor

Select from 5 different text fonts.

Vivace. ♩ = 184



## SONATA

( In D major )

## Information &amp; Magazines on Disk

**INF.59: ST NEWS** Volume 7 Issue 3: the third issue of 1992, the sixth undead one and the 33rd in total. It was finished on November 15th 1992. Contents include, in the words of the editors: Adventure solutions: "Gnome Ranger", "Horror Zombies", "Leisure Suit Larry V", "Zork III" AND "Bureaucracy"! News about the latest software, the latest viruses, and the latest results in the quest for the purification of the English language! An interview with the hottest European instrumental band (Whistler Courbois Whistler)! Literary bits! Software reviews of the hottest new games (Microprose's "Formula One Grand Prix", "Le Redacteur 3", "Selectric", "The Carl Lewis Challenge", some new disk magazine issues and recent Floppyshop ST releases, as well as some stuff consisting of flat pieces of wood-ish material with ink on it! A great and utterly neat, very playable shareware game! "Mudpies", previously (1986) released commercially via Microdeal and Michtron. A great game, though small! Depacking galore with Mike Mee's "Multi Depack", Marinos Yannikos' "Naughty Depacker" and Mike Watson's "Mega Depack"! Bushland experiences by Stefan! ST picture formats explained (all of them)! And lots of exclamation marks.

**INI.60: Inside Info' Issue 60: EDITORIAL** - Greg Smith waxes eloquent on Falcon and things Atari. **INFODISK** - John Hutchinson's electronic magazine shell program. **ACE? MEMBERSHIP** - Sign up or re-join the best computer club in Oz! **FEATURES** >> **PD CHAT** No9 - Gary Spiteri writes. **PD UPDATE** - The latest additions to ACE's software library. **WORD SEARCH** - Phillip evaluates Hutch's Word Search Creator. **FAIR DINKUM** - Hutch's latest offerings including **CYBERDROME**. **ACE BBS** - Topical messages selected by your diligent editor. **HD NIGHTMARE** - Tony Barker of Moving Pixels relates a tale of Hard Disk drive trauma, with a happy ending. **DRI GEM** - GEM's development. **WORD + TIPS** - ACE member John Neilson, with info for Word Plus users. **FORBES MAG** - The article castigating the Tramiels. **FALCON** >> **GENIE FALCON** - Genie Q & A concerning the

Falcon. **THE GUARDIAN** - An impartial view of the Falcon's potential. **FALCON VIDEO** - More resolutions than you can poke a stick at! **FALCON DATA** - For programmers and hardware freaks. **SOFTWARE** >> **CALAMUS SL** - Calamus improvements and bug fixes. **SPAR SYSTEMS** - Accessories to help you navigate Calamus and PageStream. **POWERDOS** - Another replacement operating system. **STORM** - New terminal program - with all the geegaws. **HD BACKUP** - New Hard disk back up program and virus stomper. **ADVERTS** >> **PROGRAMS: WSC\_DEM.APP** demo of Hutch's Word Search Creator. **STZIP20** full set of ZIP archiving tools. **CYBERDROME Demo**.

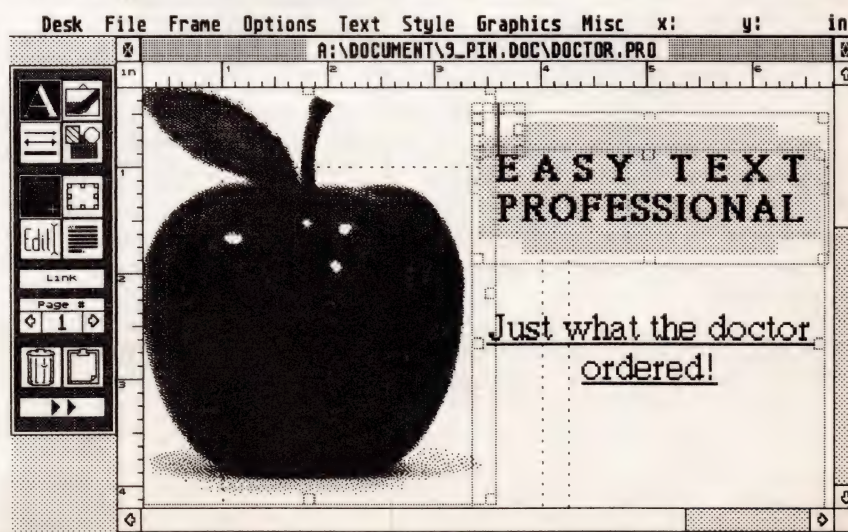
**INI.61: Inside Info' Issue 61: ABOUT ACE** - ACE Manifesto. **FEATURES** >> **ATARI NEWS** - New products and updates from the wonderful world of Atari. **INDUSTRY NEWS** - New products and updates for the "other" computers. **I.I. INDEX** - Index of the Info you lost when you formatted your Inside Info disks to back up that useless shoot em up! **MOVIE** - Peter Richards tells how to produce a rock video clip with an ST. Look Ma, no Falcon! **MULTI-MEDIA** - What it is. **COMPUTER GEEK** - Take the questionnaire and find out if you qualify! **GEM** - TOS and GEM under

further development? **FALCON** >> **FALCON REVIEW** - John Nagy applauds the Falcon. **FALCON BITS** - Posts from the nets concerning the Falcon. **FALCON FUTURE** - Phillip White ponders the future of Atari's Falcon. **SAFARI REPORT** - Recent show report from Texas. **SOFTWARE** >> **GFA 4** - Long Live GFA. **OREGON** - Conference with the distributors of Diamond Edge and Diamond Back II. **PDCHAT** - Gary Spiteri crawls from his hospital bed to write to us. **STraightFax** - Fax without a fax. **XBOOT** - Update. **PS HALFTONES** - PageStream halftones. **IMG FORMAT** - The picture file standard explained. **HARDWARE** >> **HP LASER IV** - Hewlett Packard's new 600-dpi laser printer. **SHARING** - Phillip White, ACE Co-Editor teaches his ST and Mac to share a hard disk and printer. **STe HD Mod** - Connect a 1.44MB floppy to your STe. **PROGRAMS** - **GFAMANAC** - The Manual for GFA in a desk accessory which you can add to. Better than the printed version!

**INI.62: Inside Info' Issue 62: EDITORIAL** - From Inside Info Editor - Greg Smith. **INFODISK** - Paperless magazine for the environmentalist. **FEATURES** >> **TANDY** - Electronics dealership picks up Atari. **BBS GUIDE** - How to use bulletin boards. **MULTITASKING** - Q & A on Multitasking from ACE. **BBS. II INDEX** - Past issues of II available from ACE. **NET MAGS** >> **ATARI EXPLORER 1** - Fall Comdex 1992 - Bob Brodie's wrap-up from the Las Vegas show. **Genie ST Round-Table news**. Dateline: Atari Bob Brodie's December 4th **GENIE RTC**. Atari Software Catalog - Everything you can run on your Atari. All in one big \$12 book. **ATARI EXPLORER 2** - Lexicon **GENIE RTC** - Announcing the Phoenix Object Renderer. **Developing News: STRAIGHT FAX** Distribution Change, **IAAD Membership List**. **Computing Heresy!** **MORE** isn't always better? **AEO Survey Result**. Andreas looks at **PhotoChrome3** and **OXYD**. **CuSTomer Support** - The Continuing Saga of Caveat Emptor. **ZNET No 9224** - The year in review and an economic perspective. **VIEW PIC** - See the Falcon pics which came with **EXPLORER 2**. **PROGRAMS: PIXEL\_DM.ZIP** and **TMCL1292.ZIP**

## MIDI

MID.80: Accompanist 16 Voice Sequencer





# KEY

(M) - Runs in High Resolution Mono.

(C) - Runs in Medium or Low Resolution Colour.

(DS) - Double-Sided Disk

(1Meg) - Needs one megabyte of RAM.

(Not TOS1.6) - Will not run under TOS 1.6 (STe) or TOS 1.4 (most recent STFM's).

(\$) - source code included.

(\$C) - C language.

(\$ASM) Assembler.

**Doubled Up:** With the exception of a few specially formatted disks, all single-sided disks in this catalogue are now available on double-sided disks. Doubled-Up disks have a disk code in the format: AAA\*NN. All PD disks are the same price - there is no surcharge for double-sided disks.

**Copyright:** To the best of our knowledge everything on the disks in this catalogue may be freely distributed. If you know otherwise please let us know and the offending software will be immediately withdrawn.

This catalogue is originated and copyright the ST Club.

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## Ordering Details

Please note that we do not accept orders by credit card. Orders accompanied with a cheque or postal order are dispatched by 1st Class post on the day we receive them.

All PD disks are copied onto high quality disks from known manufacturers. The price you pay us for PD disks covers only the costs of acquisition, duplication, cataloguing and distribution.

### Disk Prices

PD Disks: Standard and Doubled-Up disks.

up to 6	£1.45 each
7 to 9	£1.25 each
10 to 24	£1.00 each
25 plus	£0.85 each

Licenceware disks cost £2.95 or £3.95 each.

All prices include VAT, packing and 1st Class post.

**The Order Form for these disks is on Page 57**

Update to v2.5: Enhancements include: Help Dialogue. A new Edit Dialogue allows all types of MIDI Events to be scanned or edited. The Edit Window shows 6 MIDI Events of mixed types, and can scroll through all the Events for a Voice. Play/Record stops automatically when the music is finished. Large chords are played more accurately. Music may be Quantized immediately when recorded. Music may be transposed immediately on input, before Thru output. Block Copy and Block Move, and Track Copy move in one of 3 modes, overwrite, merge, and fill. Block Copy can now make multiple copies. Most operations can now be filtered. A new Map resolution allows all music to be displayed at once in the Map. Plus numerous Bugs Fixes.

### Music

**MUS.96: Final Score:** WYSIWYG score-writing system from Mainstream Music. Comprehensive selection of symbols, with the facility to create your own. Save files in PI3 format. Draws staves, lines, square and rounded boxes, beams, slurs and hairpins and you can add text. Printout option limited to Epson-compatible dot-matrix printers and files may be saved as PI3 files for later use. (M)

### Utilities

**UTI.312: MASTER 6.0:** shareware shell with features from both Unix and MS-DOS. Supplied programs include: DESK - allows you to use accessories from Master. INDEX - allows the generation of your own HELP files. TE - a

SSM.66



simple terminal program with a system call interface to Master. Master-Module-eXtensions include: CATCH - installs a signal handling mechanism analogous to Unix. SCREEN - shows how the module interface may be used to create debugging tools.

### Wordprocessing and DTP

**WPR.97 and WPR.98:** Calamus SI. Demo - updated to latest release.

**WPR.121 and WPR.121:** Calamus S Demo - demo version of the latest version of Calamus.

**WPR.122: Easy Text Professional:** Demo version of this feature-rich budget DTP package.

# Licenseware Update

## Peaceville Music Demo's £1.95 each

**LCW.10: Acts of the Unspeakable** by Auto-psy (C).

**LCW.11: Erotic Literature demo** - music by My Dying Bride and coded by Zone Developments. (C)

## Budgie UK £2.95 each

**GBU.98: States and Counties:** Upgraded to v1.3 and covers Africa, Scotland, Wales, USA, Ireland and England. An ideal way of learning about states and counties. Lovely maps. New version with 3 prompts for each round. Great educational value! (C)

**GBU.109: EXCHANGE RATES** by Mike Duncan: The slickest way yet of learning about, and finding out, exchange rates between 60 world currencies. The graphic presentation, with flags for each country, is excellent. Also, by the same author, an excellent education package to learn the alphabet while having fun: PIGEON POST. (C)

**GBU.110: TANX** by Donald Campbell: The object is to get as many of your tanks through the enemy minefield, while preventing your opponent getting his tanks through by placing

five mines on your minefield. Somewhat similar to battleships but with new strategy elements. Three levels of difficulty. On same disk an introduction to BIORHYTHMS with classic examples. (C)

**GBU.111 INTERNATIONAL CRICKET** by Paul Dowers. Full 3D animated action with realistic sampled sound effects. Choose batting order and team. Each player has individual batting, bowling, catching, throwing and stopping skills. Fielders also have agility ratings which affect their running speed when fielding. Position the fielders where you want them. 3 different bowler types: fast, medium, spin. Bowl bouncers, yorkers, full tosses, etc., etc. Six different batting shots: hook, leg glance, straight drive, off drive, defensive, square cut. Catches, run outs, lbw, over throws, no balls, wides, etc. Every aspect of playing a game of cricket is covered. (C)

**GBU.112: GO-MOKU** by Bruno Azzara. Play against a friend or against the computer. The computer is hard to beat but this increases the challenge. A very nicely presented version of the old Japanese board game. Also on disk, a demo version of Bruno's new paint program, specifically aimed at STOS users. (C)

Shoestring Educational Licenceware

**LCW.12: Shoestring Compilation No.1:** Robot Words plus Moon Letters. (C) Cost: £3.95.



# Going On-Line

## The NeST Network

*This month Mark Baines renews an old friendship and investigates an alternative Atari network.*

I have known Daron Brewood from my earlier days of comms but unfortunately we lost contact for two years until recently. Daron is one of those rare breed of people, a Sysop whose generosity knows no bounds. But more than that, Daron is an innovator. Through his initial actions, a new network for Atari enthusiasts was set up three years ago and his gentle but persuasive leadership qualities have made it the worldwide success it is today. I recently spoke to Daron about himself and NeST.

*1. How long have you been interested in comms and a sysop? Give a little potted biography.*

I've been interested in comms ever since I bought my first Spectrum and joined a computer club in my home town of Macclesfield, where I saw modems put to good use logging onto BBSs during a demo on-line night.

As soon as I bought my first house the computer gained a modem, and eventually the old phone bills started to rise. To fight the growing bills I decided to start my own BBS, "STun - NeST Central" but originally called the "ST User Network BBS". It first came on-line about five years ago, running on two one-megabyte floppies and a 1200/75 bps modem.

Since then STun has grown and now takes 160 megabytes of hard disk and a high-speed modem. The phone bills have increased, though, owing to my calling out to get files for users and accessing the international file networks.

*2. What networks is STun attached to?*

STun is linked into:  
Network ST- the NeST network  
FidoNet - the international

world computer network  
MysticNet - an over 18's network, originating in Australia  
AtariNet - an American-based Atari ST network

*3. What is NeST and your involvement with it?*

NeST (Network ST) is a worldwide computer network, spanning eighteen countries and dedicated to the Atari range of computers.

Basically I originated the network, and am the Zone Co-ordinator. That means if a Regional Controller (one for each country) can't solve a problem, it gets landed on my plate. I also update and issue the master node listing, the NeSTlist.

NeST is semi-democratic, that is, all positions lower than mine may be changed if enough people in that region, or net, want that person replaced.

*4. STun is the NeST Central - explain that a little. What is STun's importance to the network?*

Basically my BBS, as it was, was the home of the Zone Co-ordinator. Note that owing to hardware problems and limited time I've closed STun to the public. It now operates as a mail-only system for Binkley mailers. The BBS may return when I have more free time.

*5. When was NeST set up and why?*

NeST was set up two years ago, on the 28th of February. Formed by five of us who were thrown out of the old EuroNet network, as we did not agree with its inflexible attitude to using new software.

*6. What is the philosophy behind NeST, what makes it different*

*from the other networks?*

Our aim is to help Atari users worldwide, through a comprehensive and free Atari-based computer system. NeST stands out as it was the first worldwide Atari dedicated network and is currently the largest in existence. NeST also has the largest number of message areas, file areas and, of course, users of any other Atari Network anywhere in the world.

*7. What are your aims and objectives for NeST, now and in the future?*

We hope eventually to have computer links into every country in the world where the Atari products are sold, endeavouring to assist any user anywhere, quickly and accurately. We hope to form gateways with all Atari-based networks in existence to further Atari communication. This is already taking place to a certain extent with the American AtariNet network.

We actively work with Atari in the UK, having given lectures on comms at Atari exhibitions. Our Italian co-ordinator reviews software, and works with Atari in Italy. In Australia we have members who work for Atari.

*8. How big is NeST exactly?*

NeST currently has more than 180 full BBS members spanning eighteen countries, from the CIS, to Australia, Scandinavia, Europe and, of course, the UK.

*9. Does NeST provide gateways to other systems?*

NeST at the moment has a gateway with AtariNet in the United States. We are hoping to link into Usenet and CIX soon.

*10. Tell us a little more about AtariNet?*

The link to AtariNet is very small, with only the FidoNet technology echoes being linked. AtariNet was formed about a year ago by Bill Scull, I think, who wanted a "good old USA" network. We are on good terms, though, and we hope to open more gateways in the future, if the users allow it.

*11. Concerning the gateways to Usenet and CIX. How will these operate?*

We are still awaiting the development of UUCP compatible software on the ST, so this one is for the future. Hopefully though, we should have links in operation within two years.

*12. What can NeST offer the ordinary comms user? Is it suitable for the new user just starting out?*

NeST's main usage by the ordinary user is the message areas, covering a wide range of topics; programming, game playing, hardware/software support, general chat on any topic, international chat, bible discussions. Basically, you can name a subject and it will be covered somewhere.

*13. Thank you very much Daron for this interesting discussion. Any last comments?*

Just that NeST is the quickest growing and friendliest network around. We acquire on average three new members per week, compared to one in AtariNet and one per month in FidoNet and TurboNet. We now span eighteen countries and have the widest coverage of any Atari network.





# ST Applications

## Issue 1

Reviews: NeoDesk 3, Universal Item Selector III, Deluxe Paint, Easy Draw 3, Tristan, PD Adventure Games, C - A Dabhand Guide, Oxford Dictionary of Computing; Articles: CES '90, MIDI Hands on Show, MIDI in the UK, Fontkit Plus Tutorial V, That's Write, Hard Disk Backup, Searching Directory Trees, MIDI Software in C, CP/M Disks, Gadgets by Small.

## Issue 2

Reviews: NeoDesk CLI, Le Rédacteur v3.03, Megapaint II, Protext v5, Jet Setters (Inkjet printer), Dr. T's Tiger Club, Headstart; Articles: Whistle Stop Tour, Fleet Street Publisher 3 or Timeworks?, TeX Notes, Fontkit Plus Tutorial VI, ST Parallel Port Buffer, MIDI Software in C.

## Issue 3

Reviews: Wordflair, Molgraph, Write ON, EdScheme; Articles: Computer Shopper Show, Living with the Atari Laser, Working in Tandem (HP Deskjet), LaserFace, On-Line Conferencing (CIX), Racing Spreadsheets, Giving it the WERCS - Part 1, Dan Wilga Interview.

## Issue 4

Reviews: Harlekin, CADja, Calligrapher, Reflex Board; Articles: 16-bit Computer Fair Reports, Scanners and Pixels, Your FirST Basic, DIY Fan Thermostat, Fontswitch 3 - Part 1, Giving it the WERCS - Part 2, GEM Dialogue boxes in C.

## Issue 5

Reviews: Keysl, Craft 2, ISETL, AdSpeed, Personal Finance Manager Plus, Master Time, Game Makers' Manual, FastCopy 3; Articles: FastFire, Bertha (DIY Upgrade), MIDI Fundamentals - Part 1, Auto-Run, Software Documentation, Fontswitch - Part 2, Tempus - Part 1, Giving it the WERCS - Part 3.

## Issue 6

Reviews: Playback, Quartet, Opus 2.2, Auto-Switch Overscan, In The Public Domain; Articles: Atari Press Conference, ST in the Office, Scanning New Horizons, MIDI Fundamentals - Part 1, Switch-On Delay Unit, Tempus - Part 2, Giving it the WERCS - Part 4.

## Issue 7

Reviews: MasterSound 2, Introducing Atari ST Machine Code, Retouche, Deskjet

Refills, Migraph Scanner and Touch-Up, In the Public Domain; Articles: TeX First Aid, More Upgrades, MIDI Fundamentals, STE Programming.

## Issue 8

Reviews: That's Write, Minix 1.5, HyperDraw, VidiChrome, G+Plus 1.5, Head to Head; Articles: The ST in Education, Getting to Grips with Cubase - Part 1, STE or Mac Classic?, STE Programming.

## Issue 9

Reviews: Replay 8, Knife ST, GO, Professional Virus Killer, SuperBoot versus XBoot, Bible Concordance, Master CAD, Xtra RAM ST+2, The Blag; Articles: High Density Floppies, Cubase - Part 2, In the Public Domain.

## Issue 10

Reviews: HyperChart, Knife ST - Ultimate Disk Editor?, CodeKeys, Cold Hard Cache, PC Speed, Fractal Music, Public Domain Software; Articles: Racing Spreadsheet - Is it a Winner?, Getting to Grips with Cubase - Part 3, From the Hotline, File Selector, Traps for the Wary - Part 1.

## Issue 11

Reviews: PageStream 2.1, Didot lineArt, Mortimer, Harlekin 2, Adimens Database; Articles: Pilgrimage to Dusseldorf, Harnessing Harlekin, ST Internals, Getting to Grips with Cubase Part 4, From the Hotline, Traps for the Wary Part 2.

## Issue 12

Reviews: Hard Reign's a-Gonna Fall (Hard Drives), MultiDesk, The Ultimate Ripper, Hypel, Calligrapher Junior; Articles: Dusseldorf '91 Show Report, ST Internals, Getting to Grips With Cubase Part 5, Proportional Print Under Control, From the Hotline, Traps for the Wary - Part 3.

## Issue 13

Reviews: GFA Draft Plus v3, Hotwire, Avant Vector, Games in Black and White, Printer-Q, Public Domain Software; Articles: ST Internals (Part 9), Getting to Grips with Cubase (Part 6), Going On-Line, Signum - The Jewel in the Crown, From the Hotline, Traps for the Wary - Part 4.

## Issue 14

Reviews: Redacteur v3.15 - English version, Maxifile, Universal Item Selector v3.3, Word Perfect v4.1, Score Perfect, PD Soft-

ware, M.ROS Utilities Disk; Articles: From DTP to Prepress, From the Hotline, Rainbow TOS Exposed.

## Issue 15

Reviews: Computer Shopper Show, Ultimate Virus Killer, Technobox Drafter 2, Stereo Replay Cartridge, Brother HJ100 Inkjet Printer, Answer Back Junior Quiz, Laser DB; Articles: pLeisure Computing, Hard Disk Lockout, ST Church User, Calligrapher Road Tested, Going On-Line, Cookie Monster.

## Issue 16

Reviews: Redacteur 3, Lookit & Popit, C-Font, The Word According to Atari (Doc-Support), Planetarium, Polyframe - Part I, The KAT; Articles: From DTP to Prepress (Part II), Hotline.

## Issue 17

Reviews: Timeworks Publisher 2, CompoScript, Turbo 20/20, PolyFrame (Part II), JC Label, ZapCard; Articles: 16-Bit SHOW Report, Object Orientated Programming, Redacteur Fonts, MIDI Switch Box, Home Studio, Hotline.

## Issue 18

Reviews: HiSoft Basic 2, Quick ST3, Bitz TOS2, Protar T60 Tape Streamer, Patchbase; Articles: Fonts in Publisher 2, Living With GDOS, Educational Software, Let's Talk Smalltalk.

## Issue 19

Reviews: FastCopy PRO, Phonic FAX Modem, Calligrapher PAKs, Magic Storybook; Articles: Atari Switzerland, Customizing Redacteur 3, Comapible Upgrades, C++ - Part 1, DTP - a toe in the water.

## Issue 20

Reviews: DTP Books, Gnu C++ - Part 2, TCOS Classification System, RDE - The Ultimate RAM Disk?, The Chameleon v1.19. Articles: The Third MIDI Music Show, Inside the TT, Overscan, Working with Didot Professional, Soft Acceleration.

## Issue 21

Reviews: B-stat, Concerto, BJ10-ex bubble-jet printer, Family Tree, Educational Software. Articles: Power without the Price?, TeX - from the top, DIY Projects, Easy Draw 2 - an overview - Part 1, It's a Hard Life, Extra Colours.

## Issue 22

Reviews: MultiTOS, LDW Power 2, FontGDOS, Computers and Chaos (book review), Lizard. Articles: 16Bit Computer Show, Atari's Falcon 030, The Power and the Price, Grafix Arts, It's a Hard Life - Part Two, Easy Draw 2 - Part 2, TeX - from the top - Part 2.

## Issue 23

Reviews: Fontkit Plus v4, Atari's Introductions, HCS Fax-Modem, PageStream v2.2, PageAssistant. Articles: MIDI News, Computer Shows, Indexing on the ST, Grafix Arts, TeX from the Top - Part Three, It's a Hard Life - Part 3.

## Issue 24

Reviews: Laser Printers, Word-Ex v2.01, Imagecopy, Shoestring Software, Fontswitch 4. Articles: Data Transfer, TV/Mono Monitor Switch Box, Grafix Arts, TeX from the Top - Part Four, Advanced ST System Programming - Part 1.

## Issue 25

Reviews: Diamond Back II, AT Speed C16, Protext v5.53, The Numbers Racket (PD Spreadsheets), Book Reviews, Godel, ADI Educational Software. Articles: Falcon-Predator or Prey?, Desktop Ideas, 10 Rules for PD Programmers, Advanced ST System Programming - Part 2, The C Users' Group (UK).

## Issue 26

Reviews: dbWriter, Easy Text Professional, Mouse Tricks 2, Wordflair II, PD Adventures. Articles: PostScript, Superbase Tutorial - Part 1, Easy NeoDesk Icons, Deskjet Interface, Advanced ST System Programming - Part 3.

## Regular Features

Each issue of ST Application includes a News Column and Forum pages. Other regular features include: Sticks and Stones, CAD Column, Jeremiahs Journal - Adventure game column (STA2 to STA24), Programmers' Forum (from STA2), ST Internals - guide to workings of the ST (STA5 to STA14), Desktop Discussions (from STA5), A to Z of the Atari ST (STA9 to STA22), Going On-Line - comms column (from STA13), PD Disks Updates (most issues), and Grafix Arts (from STA23).

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Each set of 12 magazines comprises 720 A4 pages packed full of information on getting the best out of your ST. Superb value for money!



# FORUM



## CIX Downloads

Some of the messages in this month's Forum have been downloaded from the ST Applications forums on CIX (081-390-1244). These entries have the CIX message number given after the author's name. Note that text prefixed with a 'greater than' symbol (>) is an extract from a previous message that the writer is commenting on.

**T**he Forum pages are a regular feature of ST Applications, enabling readers to exchange ideas and help each other out with problems. Whilst we attempt to briefly answer questions here, if you have additional information or ideas please do submit them for publication. What you consider to be trivial information can often be of considerable use to other readers!

Please send your letters on disk if possible. Disks will be returned with a PD of the writer's choice. Longer submissions may appear as articles, in which case you will receive payment at our standard page-rate.

### Key:

The following codes are used for each Forum entry:

J Pringle - Forum STA 20: Author who first raised the subject, and in which issue.

**Q** Question

**A** Answer

**I** General information or 'Input', advice, discussion, hints and tips, etc., with or without reference to previous Forum pieces.

• Editorial reply

## HP Service

Jane Firbank - Forum STA 26

**I** Those whose DeskJets are out of warranty will discover that HP demand a substantial fee to provide the repair service described by Jane Firbank. My DeskJet Plus started to behave eccentrically, with single lines shearing, fuzziness and local distortion of characters. HP advised that the cost of repair would be not far below purchasing a new DeskJet 500, which was their advised course of action. Having been told the machine was a write-off, I had nothing more to lose, and disregarding the manual's bloodcurdling warnings against use of solvents, etc., I sprayed the bar on which the printer head travels with WD40. Since when the printer has worked as new. (The recommended water, gentle cloth, etc., had no effect whatever.) Hope this saves someone a penny or two...

John Wilkinson

## Unstuck Mouse Stick

**I** After reading the report on the Gravis Mouse Stick I decided to buy one, and so I visited RC Simulations where I was told they no longer supply the Mouse Stick for the Atari ST owing to problems with the Canadian company that makes them.

P Cassar

## Noisy Fans

Martin Norfolk - Forum STA 24

Chris Howland - Forum STA 25

Dennis V Long - Forum STA 25

G Craig - Forum STA 25

**I** May I add further confusion to the ongoing cooling fan saga? I have recently installed a fan of 35 mm diameter into my STE which seemed to run a bit warm with 4 megs of 9 bit SIMMS nesting inside. The fan was intended for use in a Pioneer audio amplifier. Just to be different, but mainly to cut down noise, I decided to string my fan between the 12v and the 5v rails, an operating potential difference of 7v, giving a barely audible fan above the noise of my hard drive. Now the area around the

power supply is warm, which I prefer to it being stone cold as silicon devices prefer to run warm, and this enables them to work within their operating temperature slope.

I mounted the fan on the fingers of steel above the modulator, which I bent up and drilled.

S R Sweet

## Public Dominator

**I** I read with disgust the news item in ST Applications issue 25 about the Public Dominator Library defaulting on Budgie Royalty Payments. How low can you get? Still, I shouldn't really be surprised, as the MicroMart classifieds currently contain adverts from PDOM offering 'A Database Mailing List of 15,000 ST PD Customers for £150'. Yes, order from PDOM and sign up for junk mail... They are also offering to hire an 'Atari ST PD Library of 1200+ Disks, entire library must be hired at 30p per disk for two weeks, for you to duplicate'. Hardly an unmissable bargain, and a sign that PDOM are in financial difficulties? I certainly hope so.

John Weller

## Music Tex

Barrie Stott - Forum STA 26

**A** I suggest that Barrie Stott gets a copy of the music printing programme Tristan, obtainable from the German software house Maxon Computer, at Industrie Strasse 26, D6236 Eschborn, Germany. It costs DM25, around £10, and offers pretty well every facility a musician might want - including transposition and selective printing of individual parts from a full score. The only drawback might be that the instructions are in German. The programme allows a maximum of 100 pages in memory, each with 32 staves.

Bernard Keeffe

• Tristan was reviewed in issue one of ST Applications.

## Big TEX for the ST

**A** The Atari TEX system on disks PDD 90 to PDD 93 is able to generate the format file



required to implement Big TEX.

The process is as follows:

1. Run the shell program CTEX.TTP
2. Click on the 'Finden' menu and select 'IN-ITEX'. The user is presented with the file selector, and should select either:

- a) INITEX.TTP for Normal TEX
- b) INITEX\_L.TTP for Large TEX
- c) INITEX\_H.TTP for Huge TEX

Note: The INITEX program does not run at this stage.

3. Click on the 'Arbeiten' menu, and select 'Erzeugen'. The user is again presented with the File Selector, and should select the appropriate \*.INI file. e.g. selecting PLAIN.INI generates the format file for Plain TEX.

The INITEX program will now run, and on completion the required format file will have been written to the path previously specified by the 'Environment' option from the 'Parameter' Menu.

Depending on whether Normal, Large or Huge TEX was selected in step 2, the File extension will be FMT, FML or FMH.

4. To select the required version of TEX, the user should again click on the 'Finden' menu and select TEX, and when presented with the file selector should select either:

- a) TEX.TTP (to use 'formatname.FMT' for Normal TEX)
- b) TEX\_L.TTP (to use 'formatname.FML' for Large TEX)
- c) TEX\_H.TTP (to use 'formatname.FMH' for Huge TEX)

Note: The chosen configuration may be saved by the 'Speichern' option in the 'Parameter' Menu.

The recommended minimum RAM requirements for Normal TEX, Large Tex, and Huge TEX are 1MB, 2MB and 4MB respectively.

Mike Horey

## Falcon -

### Predator or Prey?

Michael Baxter - STA 25

I > Scare-mongering reports (from Commodore sources, I might add) that the Falcon is not compatible with the ST or TT.

Not being aware of any of these reports having started anywhere near Commodore, does ST Applications have any intent of backing up these allegations (which I suspect Commodore would be interested in)? This kind of mud-slinging surely has no sensible part in such a mag.

> all of Hisoft's development and business software runs on the Falcon without any problems

Well Mandy Rice Davies - especially since they've had a Falcon for some considerable while. If they haven't got their stuff to run by now then I'd be worried - the more important

question, avoided by the article, is "Did any of their stuff run without modification?"

> some incompatibilities, but nothing so severe to render complete applications unusable.

Again, on the only machine (seriously pre-release TOS) that we've used then ROFL - of course not being able to select menu entries and programs falling over doesn't render them unusable, does it?

As for the PC emulation - both sides continue to talk in terms which are biased in their favour and until one can get two typical machines side by side then it is all very speculative - however, I would say that the article is biased in the following areas.

The comparison of the Falcon to the PC is done in the usual way of trying to build a similar spec PC. However, it is surely equally valid to try and add hardware to the Falcon to come up to the spec of a similar cost PC - memory, hard disk capacity and true Super-VGA (1024\*768 & 800 \* 600). While the idea of PC emulation is valid it will soon fill up the measly hard disk supplied with the Falcon if people start attempting to run Windows and other GUI-based software on the Falcon. And no, I don't think it would set the market alight at all just by doing that.

The speed of the two machines can only be realistically compared by having them side by side - from our timings the Falcon for most purposes (eg excluding things like rendering in Cad 3D - where it is damn fast) such as Word Pro is very close to the speed of the Mega STe - this has been supported by timings emanating from the States.

Having had the STe side by side with even a 3-year old 386 PC running Windows - then subjectively (and in simple timings) the PC is faster than the ST and that is when running a 800\*600 16-colour screen v a mono screen.

The effect of the DSP on the apparent speed of the machine is surely in doubt - it is after all very similar to the maths co-pro on the PC - if the software doesn't use it then it is irrelevant to the entire debate - existing software will fall into this classification and I fail to see how things like word processors will be significantly enhanced by its presence. Oh, and someone should really have pointed out that the P5 is now called the Pentium - which I guess either dates the article or the author's knowledge of the PC world.

On the MIDI side of things there has been great debate recently about whether the Falcon is capable of even saving Atari's market share in the US midi world (debate on CIS) let alone improving it against the steady inroads being made by the Mac.

Tony

#416, from sproducts

(Note all above my own views and comments - not GST's.)

I I read your comments on the Falcon/PC debate with interest and have a few comments to make.

Firstly, I would like to make it very clear that

the only reason that we have had a Falcon for a reasonable length of time is because we wanted it and wanted it badly. We did a lot of early work to show that we took the idea of a new Atari machine seriously and that we would want to code for it and support it. We were rewarded for that investment with an early Falcon.

Most of our in-house software worked first-time on the Falcon, without any modification at all. This includes Devpac, Lattice C, HiSoft BASIC 2, ProFlight, HighSpeed Pascal, WERCS, KnifeST, Diamond Back II, Harlekin II, SuperBase 3, K-Spread 4, etc., etc. Even Metacomco ST BASIC works!! None of these packages needed any changes at all to work.

My general feeling about the Falcon is that it is a damn good machine with a hardware design that throws down the gauntlet to both hardware and software engineers to produce exciting and innovative packages that will breathe new life into the stagnant general-purpose, home computer market. I don't want to compare it to a PC because it can do things that most PCs simply can't do. I don't want to compare it to an ST because this is 1992, not 1984. I certainly don't want to play ST games on it - STs are quite good at that.

We will support the Falcon because it is different and interesting and fun. I am not trying to convert anybody else to do the same - each to his own. If you like PCs, stick with them - that's fine by me. Why try to shoot down the Falcon - diversity is life.

David Link

HiSoft (officially).

#425, from hisoft

I IMHO that was an extremely helpful and most cheering message, which should really set the record straight. Particularly as it comes from the company which has done more to support the ST over the last 2 years than any other, bar none (including Atari UK).

Steve

#426, from spedler

I > Firstly, I would like to make it very clear that the only reason that we have had a Falcon for a reasonable length of time is because we wanted it and wanted it badly.

That is something that I have always understood and have never intended to give any impression otherwise. OTOH I do not have an exact idea about how long you've had a Falcon - nor whether the possession was covered by the NDA which both you and us are (still) covered by for some aspects of that machine. For ourselves it is less easy to get excited about the abilities of the Falcon since most of them do not particularly affect our product range - in fact we have more to be concerned about (I guess) with MultiTOS.

> Most of our in-house software worked first-time on the Falcon...

Fine - that answers the specific question I had raised - thanks. The reason for raising that



question was that an increasing part of your range is being advertised as Falcon-compatible and so a reference to your range could be taken as including those and not the original versions (had modifications been needed).

FWIW in the short time we've played with a Falcon we've found the strangest things work and equally "sensible" packages don't - we only took CAD-3D with us for a joke and were stunned when it mostly worked.

> I don't want to compare it to a PC because it can do things that most PCs simply can't do.

And to some extent vice-versa. All I have been trying to do (more so on CIS) is attempting to bring some reality (and that covers both extremes) into the discussion about how the two machines compare - some of the statements made in this area have been so laughable it is untrue - I am trying (and probably failing) to bring some accuracy into the affair. If that is perceived as biased then IMO it is an unfortunate side effect but one I'll live with.

> We will support the Falcon because it is different and interesting and fun.

After all the article was previewed as being about the Falcon without the benefit of rose-tinted glasses. Opinion here was that the article was still not without bias in some areas.

The debates on CIS have been far more vocal than those over here and I felt it right to point out the debate which was going on over the midi side - maybe that is purely an American market experience though and not relevant to the UK/Europe.

As for support for the Falcon - well we're still waiting to find out whether we need to change anything - eg are the problems we experience \*only\* on the pre-release versions of TOS and then if we do need to change anything all we need to do is get hold of a Falcon for a few days :-)

Tony (still unofficial I guess :-))  
#428, from sproducts

### Falcon Feedback

Piper - ECTS Report STA 23

John Watkins - Forum STA 24

Britt Johnstone - Forum STA 24

Alistair Bodin - Forum STA 25

John Watkins - Forum STA 25

**Q** Having put on hold my plans to extend the memory in my ST520 from 2.5 to 4MB (to cope with increases in size of my spreadsheets) since the promise of Falcon 030 appeared on the scene, and as a consequence finding an ever decreasing margin of free memory (78kb. at last check) I have been looking forwards with some anxiety to the new machine becoming available! Like many others, no doubt!

Mathew Lodge's comments on the memory allocation aspects of Multi-TOS did raise a small concern in my mind, but I told myself that I wasn't greatly worried about doing several things at once so it wouldn't matter, would it! But my concerns were stirred up again by the comments by Leon CIX #388, and

Steve CIX #390 in Forum (STA 26) about the MultiTOS operating system and GEM incompatibilities.

Would I be wrong to expect that:

a) the applications I most use, viz: K-Spread 4 and 1st Word will work with a Falcon 030. By work I mean function without crashing whilst in a big spreadsheet.

b) current (SPD and .DOC) files can be transferred to a Falcon from my present DataPulse Hard Disk (ICD software) simply by plugging the latter into the SCSI II port on the Falcon. I currently have this HD set up to boot from Partition C: would this foul up a Falcon with an inbuilt IDE HD drive?

c) it will be possible to plug in my existing 720KB single and double sided disk drive units in addition to the internal 1.4MB HDD unit, so that data and Fast Basic programmes I hold on floppy disks can continue to be available on the Falcon (the Fast Basic cartridge would appear to fit the 40-pin port).

d) the IDE drive in the Falcon will not give the type of trouble noted in the press as afflicting the Amstrad machines.

I hope that I am not appearing to be too anxious about a transfer to a Falcon, but an important part of my data relates to on-going daily monitoring of my medical condition and I am most concerned that I do not run a risk of losing anything from my records since they are used by my G.P. to control my treatment, which has been continuous for the past eight years, and unfortunately is likely to continue to be so.

May I say that ST Applications continues to be my "lifeline" in connection with the modest, but important (to me), amount of computing work I do. Having retired some eleven years ago I do not feel able to be too adventurous in these matters!

W B Kemmish

● In general, comments about the Falcon030 should be taken with a pinch of salt at this stage - Atari have not yet finalised the version of TOS4 that will be fitted - and MultiTOS is a very long way from being complete. Compatibility with MultiTOS is not required for a program to run on the Falcon030. We have had a Falcon030 since the end of December and the majority of (mono) application software that we use day to day works on it, whereas next to nothing works under MultiTOS.

On the points you raise:

a. HiSoft have confirmed that K-Spread 4 is fully compatible with the Falcon030. Phone them for details of any upgrades, etc.

b. You should be able to plug the SCSI mechanism from your ST hard drive into the Falcon030 SCSI port. AHDI should recognise it and give it the next set of free partition letters. If you only want to transfer the files then it may make more sense to simply use a hard disk backup utility to do this - connecting a SCSI drive will involve dismantling your ST hard drive and making up a suitable cable.

c. No, you cannot plug an external drive into

the Falcon030, but the built-in high density drive will read your ST disks. The Fast Basic cartridge may not work on the Falcon - indeed there are some rumours that future Falcon models may not have a cartridge port - best to advertise for a second-hand copy of the disk-based version of Fast Basic.

d. Millions of PCs use IDE drives and very few have any sort of problem. The drive on our Falcon has been fast, quiet, and trouble-free. Amstrad are the firm that inflicted the obsolete 3" disk on millions of innocent first-time computer users...

Data Integrity: In view of the nature of the data it would be wisest to keep your records on both your ST and your Falcon set ups for a period so that you can fall-back on the older system should any unforeseen problems arise.

**I** Other people have complained about the Falcon's case but I don't think it is that bad - BUT what about the mouse?! When the ST came out it might have been acceptable, but now it looks & handles like a brick. That is why people like me got Naksha mice. Looking at the very first advert it seemed to show a modern mouse but now the adverts show the old Atari mouse. Are they using old stock?

W Turner

**I** A few things about the Falcon. It's going to be in a new case when it has a full release. ST software isn't supposed to be compatible with the Falcon, so it is unfair to complain about incompatibilities. Finally, does anyone actually have a full release date for it. I'm going to the International Computer show, hoping for a glimpse of the new magic machine. It's up to Atari now.

James Attack

### ST to ST

**Q** I'll confess that despite my years working with computers, communications applications are one of my weak spots. I have several Mega STE computers in close proximity of each other, soon to be joined by a Falcon, each with their own hard disks. I want to transfer the contents of the hard disk partitions between machines, but don't want to get involved with extensive disk swapping sessions. The answer - I think - lies in a null modem cable and suitable comms software. Would ordinary modem comms software (such as that built into Harlekin) do the job? Or would I need something a bit more sophisticated? My priority is data transfer speed, but I do not need any network facilities.

Michael Baxter

● Yes, you can use any comms software with file transfer facilities (X-Modem, Y-Modem, etc.). For a more friendly interface take a look at STALK on ST Club disk DMG.20 - this program is solely for transferring files between STs and has a very straightforward set up screen. Were there any software to do the job you could network the machines via the LAN ports on the Mega STEs and Falcon!



## Educational Computing

Günter Minnerup - STA 26

**I** As a parent I wholeheartedly endorse Günter's view of the shambles which now constitutes educational computing. In my children's school, one computer sits at the back of each classroom (they are of course all different - a BBC toy, a variety of Research Machines systems stretching back for several years...). The standard approach to using them is - if you finish your spellings/maths/technology/writing/other 'real work', then you may use the computer while the others catch up. The software is mostly trivial: rote learning, some simple adventure-style games which would not tax the deductive powers of a six-year-old (my children are 10), Logo (but used untaught, and unsupervised - how many children in these circumstances get beyond drawing spirograph pictures into what Logo is really about?). None of the school's teachers appear to have any enthusiasm, understanding, or training in computers. I know there are exceptions, but I suspect most primary and middle schools at least correspond in some measure to this scenario.

If you care about computers in education, read Seymour Papert's book *Mindstorms* (Harvester, 1980 - about £11.00 in paperback). Papert is the inventor of Logo: the book is full of insights into learning, teaching, and the place in education (and beyond) of computers as tools to enable the development of human potential.

David Harvey

## GhostScript

**I** In STA 23 CAD Column (and numerous times on CIX :-)) I mentioned that I was unable to get the Atari SLM804 to work with GhostScript PostScript Interpreter.

I've now solved the problems which were:

a) The file GEMGS.RC must be configured correctly; this works for me:

(\* denotes a comment line ignored by GhostScript)

\* Extracts from my 'gemgs.rc' file

\* This line sets the laser as the default device:  
device slm

\* Other active options in my file are:  
nopause 0  
windows 1

\* These lines tell GhostScript where its files are:  
setenv PATH=j:\gs;j:\gs\ps  
setenv GS\_LIB=j:\gs;j:\gs\ps;j:\gs\fonts  
\* This line added so that slm appears in the device menu:  
devmenu slm

b) The diablo emulator supplied with the SLM804 must be installed.

GhostScript can also be used with the Deskjet

and other printers and is well worth a download from [atari.gnu/files](http://atari.gnu/files). At over 3Mb I suggest a Sunday afternoon BT special:-)

Joe Connor

CIX #386

## Using HP Fonts

**Q** I had been planning to buy one of HP's own scalable fonts for my printer; however, after several efforts I managed to find someone in HP who understood my questions and he confirmed that it is essential to have their Type Director management programme to be able to control the font. Needless to say, this programme is only available to run under DOS or Windows, not even for the Mac. Are you aware of any work being done or completed which would enable us to download a scalable font and then use it fully?

Dr. J M Bowsher

• No. It should be possible to send to the HP, via a printer driver, the commands required to call the scalable font at the size(s) required.

## First Word Plus + HP

**Q** I own an Atari STE and am using 1st Word Plus software. I would like to purchase a disk containing extra fonts. Could you advise me which fonts are compatible with 1st Word Plus. Would these fonts also be compatible with my printer - Fujitsu B100 Bubble Jet? (it requires HP Deskjet Plus driver).

I would be grateful for any advice regarding fonts and drivers - I have tried an HP driver from a Cubase disk, loaded into 1st Word Plus, but it could not configure it.

F Monk

• You can use Fontswitch to change the screen fonts used by 1st Word Plus and to download a suitable printer font to your printer. With dot matrix printers this is both easy and cost effective: Fontswitch includes a utility that allows even printers without downloading facilities to use this technique. With a Deskjet (or compatible) you need to add a RAM cartridge to accept the downloaded fonts. At £50+ this is really only worth considering if you have a pressing need to use downloaded fonts; the main advantage is that printing is faster as far less data needs be sent to the printer compared to getting similar results from a wordprocessor that prints in graphics mode. Take a look at some of the multi-font wordprocessors which support the Deskjet.

In general, you cannot swap printer drivers between applications: see last month's Beginners' Forum for more on this topic. There are a number of 1st Word Plus drivers for the Deskjet on disk PTR.11.

## Atari no Go inJapan

**I** There's a computer pricing war of sorts in Japan at the moment. Compaq have introduced

a model that is 50% cheaper than its nearest Japanese equivalents. Now IBM and Apple are slashing prices too. Apple have about 14% of the market in Japan, which is pretty impressive considering how competitive Japanese companies can be. The Amiga has Japanese language software too. Atari, predictably, are fading from sight. One retailer told me "They have no distribution power. We're fed up with them. Nothing but trouble", so they sold off all their Atari stock. A few other stores have also had Atari sales in the last year - and then never stocked STs again! Atari's R&D department in the south of Tokyo has also been closed.

Personally, I have too much time invested in documents that I've made using Calamus to abandon Atari completely, but I'm seriously thinking now that, if my business continues expanding, the next serious computer I'll buy will be a Macintosh. Why? because I know that they'll still be around in ten years, because all of their software is compatible, because you can move from a DTP program to an art program at the touch of a button, because it has a Japanese operating system (at the moment Japanese sections of my documents have to be pasted in by hand), because if I need to have something printed at high resolution, I can take my HD disk or Syquest cartridge to a printing shop that's just twenty minutes away from my office, because there's lots of professionally written information available about new products, and finally, if it breaks down I can get it fixed easily.

In a world hit by a bad recession where computer makers are competing frantically to get market share, it is madness to believe that merely producing a cheap computer will guarantee sales. A friend of mine has the theory that, because the three Tramiel sons grew up in wealthy surroundings, they've never really had to struggle to get anything, and because Daddy's company continues to provide them with fat salaries they have no real motivation to push their products aggressively. No longer the "business is war" image that Jack Tramiel had?!

Tony Smyth

## TT Games

**Q** Couple of quick questions - has there been any response regarding Chris Tofalos' "Forum" enquiry relating to the compatibility of MegaSTE/TT 1.44Mb/720k floppy drive combination? Apparently, plugging in a 720k Power Computing "B-Boot & Blitz" external drive can overcome a lot of games software incompatibilities, but if this is going to damage the circuitry of Mega's fitted with the new drives, then I'll give it a miss. Any info!

Also, do you know of any PD program that will set the CPU speed of a MegaSTE to 16Mhz before a autoboot disk loads? Normally, Mega's run at 8Mhz until switched to 16Mhz via the new Atari Ccontrol Panel. This means all games software runs at 8Mhz - which is fine, but a guy who knows a guy who works for MicroProse reckons that some of their



simulation software will run at increased speeds - the frame rate increases dramatically, while the action is still in real time as "events are related to the 200hz clock" inside the machine. I'd love to try this out, but I need a program that will switch the STE to 16MHz, then allow an autoboot disk to proceed as normal. Any ideas?

Michael Baxter

## Learning Programming

**Q** Have you thought of running a series of articles that cover Basic Programming for Beginners. I would like to learn to program so that I can give something in return for the increasing amount of PD I am using by, maybe writing a few programs of my own, that others might find useful. Instead of just taking from the PD Libraries I would like to be in a position of supplying instead.

I work for the Fire Service and have been on a course so that I can instruct in the use of the different applications contained on our system. Whilst I find this type of computing easy, every time I pick up a book on programming I tend to get lost whilst just reading the preface.

Am I living in cloud cuckoo land. Firstly in thinking I may be talented enough to learn to program, and secondly to think there is a language simple enough for you to explain in ST Applications.

All the books I have looked at assume at least some previous knowledge of Basic of which I have none.

Andy Taylor

● We have considered a series on basic programming in STA, but it has never got off the ground. There's little in the way of programming books for the ST. But, as the concepts of programming are machine independent, by far the best way of learning is to enroll on a course at a local Adult Education College. If this isn't possible then try a library for school text books on programming.

## Basic Problems

**Q** Can you tell me how to use HiSoft Basic 2 to print to a window in inverse video (ie. white-on-black rather than the normal black-on-white)? I have tried the routine printed in page 122 of the Basic 2 Technical Reference and it does not work. The routine is as follows.

```
PRINT "This action is ";
OUT 2, 27; OUT 2, "p" %
PRINT "VERY DANGEROUS";
OUT 2, 27; OUT 2, "q" %
```

Fred Fee

**Q** I like to write programs on my Atari STE and I have recently made a game with First Basic. I would now like to know the commands needed to allow the use of a joystick and to make my own characters (user defined graphics) in my game.

I would also like to know how to make a win-

dow on the screen in which the player can write what they want to do next. eg: "Enter Command: *walk west*" I would be very grateful if you could help me with this.

Paul Cuthbertson (13)

## Old CFNs

**Q** I have recently been evaluating the PD Demo's of both Calamus and PageStream prior to full purchase. To assist I purchased as many PD fonts as were available, and have run up against a problem. Over 50% of the Calamus fonts available on ST Club PD Disks will not load into the demo version of Calamus SL, whereas most of them will load into Calamus 1.09. Normally the same error box appears:

"Wrong File Format! The file xxxx.cfn contains data which is not of the selected Calamus Format (Font)."

The disks involved split into two distinct groups. In the first (Fon. 103-108) only four fonts caused problems. Of the second group (Fon. 121-126) approximately 90% of the fonts would not load.

E P Cox

● You can convert 'old format' Calamus fonts to the latest format by loading them into a font editor and then re-saving them. The Calamus 1.09 font editor, GENUS, Didot, or Fonty will do the trick.

## DTP/WP Choice

**Q** My wife works with young children and wants to prepare work sheets in a large and clear font. The best we have found so far is the Avant-Garde font on the Apple Macintosh at 20 points. The documents are of relatively few words per page, only a few pages each and she wishes to be able to control the layout easily. Some additional features like drawing boxes around particular parts of text and inserting lines for the children to fill in words would be desirable.

From what I can gather, Calligrapher is a package with more features than the basic word processor like First Word Plus but not as complicated (or expensive) as some full-blown DTP packages. I gather that a hard disk is almost essential for Calligrapher.

I've got a copy of Timeworks (not the latest) and have tried using Fontkit to modify the fonts available. Frankly, I find these cumbersome and complicated. I'd like to be able to buy a package off the shelf that does what we want.

A N Jack

● Calligrapher should do the job - the publishers Working Title should have a suitable typeface amongst their collection of outline fonts for Calligrapher. As you do not appear to need any of the more exotic extensions to Calligrapher, the Lite version should do all that you need - and this does not really need a hard drive.

**Q** I am thinking about buying PageStream

2. I have asked Silica Systems to send me information, but it was not until I had telephoned them four times over a period of two months that I was told that they did not have any.

The hardware I have is an Atari 4Mb Mega STE with TOS 2.06 and 50Mb hard drive. The printer that I have just acquired is a Cannon BJ300. At present I have Timeworks 2 DTP and I also use First Word Plus for text preparation.

An alternative to PageStream is Calligrapher.

Can anyone give me information about either of these. I am particularly interested in the ability to manipulate text round objects.

P Salisbury

● There are demo versions of both programs (WPR.104/105 for PageStream and WPR.26 for Calamus) - both do everything that the full versions can but without the facility to save files to disk. If your main interest is in rotating text objects then you should also consider Outline Art (Halco 0734-441525) and Didot (CGS Computer Bild 081-686-8121).

## Direct to Disk

### and all that

**I** People are being impressed, I read, with the direct-to-disk sound recording capabilities of the Falcon. Certainly it is being made much of in the press, but how many of you Atari drivers out there know that for several years it has been possible to do that on a humble ST? You didn't? Then read on.

I am in the sound recording business doing largely classical music with orchestras, choirs, brass bands and the like and for over two years I have been using a Mega 4 for editing the results. The recording is done on DAT (Digital Audio Tape) which uses a format very similar to Compact Disk i.e. 16-bit sound samples at 44.1 KHz, and it is then loaded onto hard disk via the cartridge port. Stereo audio needs vast amounts of storage capacity, about 10MB per minute, so the hard disk is a large one, 650MB giving 62 minutes of stereo recording. Data rate is high also so a short access time is needed but my Hewlett Packard embedded SCSI drive is rated at 24mS average access by the ICD test and copes very well.

The software is called Sound Maestro and is distributed by Audio Design of Pangbourne. It handles the loading to disk which it calls 'recording' and creates a list of the 'takes' in a 'session' with automatic numbering and any title you care to type in. Each take is timed and the result displayed on screen to one hundredth of a second. In edit mode takes can be called into a 'source' window, cue marks placed, and then the wanted section transferred to a 'master' window. Cut, join and insert modes are available - in fact it is very like a wordprocessor in that respect but here you are handling actual digital sound files of CD quality and seeing the waveform of the music on screen, right down to almost one sample accuracy if you wish and down to levels lower than -60



dB. Levels can be adjusted during transfer to the master, fade-in or fade-out performed and crossfades between two sounds made. Maximum crossfade time on the Mega 4 is 6 seconds, less on smaller machines because the ST's RAM is used to store and calculate the crossfade. Edit decisions can be rehearsed as many times as necessary before being saved.

With the facilities offered it becomes child's play to cut out an error in a note or a bar from a music take and replace it with the correct version from another take. Long items can be recorded piecemeal and assembled with inaudible joins. Having edited all the items they can then be listed in any preferred sequence for dumping back on to digital tape with however many seconds of silence automatically inserted between. The listing can be printed out with accurate timings as well.

How long has this been available? you must be asking. Well, the version I am using is 0.24 Copyright 1987 and I think it first saw the light of day in 1986. It runs faultlessly, never crashing, bombing or freezing and even a power cut at a crucial moment did not lose any vital material. It is a totally transparent system - what you put in comes back with no degradation at all. With that date it precedes the Falcon considerably and probably predates the audio workstations available on the Mac. Similar systems on IBM's are only now beginning to appear.

Apart from the software and a hard disk as large as you need or can afford, there is some additional hardware. The Maestro Digital Processor takes in audio in AES or SPDIF format and translates it to Atari-speak to be passed on to the cartridge port. During editing or playback the Processor sends the audio out in the same format so a suitable digital pre-amp is needed to listen to it, but they are becoming quite common in the better Hi-Fi systems. In the Falcon, of course, it appears that the additional hardware is built in as DSP chips and so a Falcon-based system will be less expensive than the Sound Maestro, but the Maestro is here and now, and has been for a while, though most Atari buffs I speak to know nothing about it.

If anyone wants to know more they can 'phone me on 0794-884404.

Peter Jury

## MusicTeX/BISON/GNU

### Make

Barrie Stott - Forum STA 26

**A** When I last used BISON on the ST (a while ago now) it needed an environment variable TEMP set to a folder for creating temporary files, crashing with bombs if one wasn't set. In addition, the program objected to the standard ST CR/LF line-end convention (ASCII 13,10), needing files in which lines are terminated UNIX-style with line feed only (ASCII 10). I seem to remember writing a utility to manipulate text files to overcome this problem (not at that stage feeling up to remaking the whole

of BISON), and putting together some notes along with some standard example programs for the distribution disks. Perhaps you don't have these: apologies if you do and it still doesn't work, you must be suffering (!) from a newer version of BISON.

It is worth checking out BYACC on disk LAN.132, which seems to be better-behaved than BISON and works OK for all the input I have fed it.

GNU MAKE objects to single backslash characters in ST file names. For it to stand any chance of working, these need to be replaced with double backslashes ('\\'). Don't forget that GNU comes from UNIX - the backslash is the standard escape character, and the file separator is an ordinary slash '/'!

David Harvey

## PageAssistant and RAM disks

**Q** I have found PageAssistant particularly useful, but with the folders IMAGE.DAT and TEXT.DAT taking up very nearly 400K disk space there was no way could I get them onto my PageStream boot disk.

However, with 4Mb of RAM at my disposal, I have tried using RDE.PRG (on ST Club's disk TMP.11) and ICE\_2\_4.PRG, the program packer. Having got an STE I use the "RDE" route. For an older TOS, the "RDY" route must be used.

Well, that's the tip but it may be worthwhile to mention a few pitfalls I had with the various approaches I tried. In the following for an older TOS read RDSH for RDCOM.

The simplest approach is to set up a non-booting ram disk. I used 512K and designated it M. Transfer the two DAT files to it. Set up another non-booting ram disk. Again I used 512K and designated this one as N. Transfer RDCOM.TTP from TMP.11 and ICE\_2\_4.PRG to ram disk N. Run RDCOM with - "s m pagedata.prg" - which saves ram disk M and contents to disk N. Now run the packer and transfer the resulting packed file to an AUTO folder on your PageStream boot disk. Change the PageAssistant paths in the configuration file to point to drive M. Use a word processor rather than from doing this from within PageAssistant. Finally, include drive M in the PageStream boot disk's DESKTOP.INF file.

While I was at it I also packed PageStream. The DAT files, being text and graphics, can be packed to well below 50% with a decent packer. PageStream packed to just over 50%, so you must have less than 50K left on your boot disk, before any modification, for this approach to fail. If this is the case then try a 10 sector, 82 track, disk. Don't forget that the Document, Text and Graphics folders can be on another disk - B:\ if you have a second drive.

We should now have PageAssistant's DAT files on PageStream's boot disk and when we call PageAssistant's information pages they

are got from ram with no disk swapping. There's also room on the ram disk for temporary storage of other files unless you choose a smaller ram disk - but don't be too tight and remember Ofir Gal's comment in STA 20 about corruption if a ram disk is 95% or so full.

I have PageStream 2.1, and it throws the occasional tantrum. Saving the documents and rebooting, perhaps more than once, often restores sanity but that takes a while without a hard drive. The next step I tried was to create a booting ram disk and transfer the AUTO folder and all the desk accessories to it along with PageAssistant's DAT files. I can save you a lot of grief here. PageAssistant does not like being run from anything other than A:\ or C:\ so designate the ram disk as C. Don't forget to create a DESKTOP.INF file. This will automatically be saved to the C drive. PageAssistant's CFG file should be placed on drive C and, of course, the paths pointing to C. This works a treat.

The next step was to go the whole hog and put PageStream itself on the ram disk. That way we can reboot PageStream when it plays up and be back up and running in no time (with PageStream installed as an auto run in the DESKTOP.INF file). It was too good to last. PageStream played up this time! I have tried a ram disk, booting/non booting, with nothing in it but PageStream, packed/unpacked, and it appears to be fussy about the size of the ram disk. It will run from 512K and 1024K but other values, 700/800/900 for example, result in various problems: the most popular being a bus error.

I've settled, for the moment, with running a packed PageStream from the non-booting A drive. I'm a bit paranoid about PageStream 2.1 - I tend to blame it for everything. Perhaps the ram disk program file is at fault. Nah, it's PageStream - isn't it?

David Roberts

## EPS and TIFF Import

**Q** Is there a program that will convert graphics files with the extenders EPS and TIF to a format that can be used by Calamus, or at the very least a paint program that I can then use to re-convert to a suitable format? None of the programs I have got appears to be able to do this.

Andy Taylor

● Do not know of anything cheap to do this; PageStream can load both EPS and TIFF files and can print to an IMG file. The next version of Imagecopy, version 2, will load TIFF format files. This will be available towards the end of March.

## German Characters

**Q** I want to print German characters from my Timeworks (version 1). I can easily do this from my First Word Plus package by selecting an appropriate driver (SSM 804D) with the printer set up with German as its language set. Have you a disk with an application which



will let me change the driver within Timeworks?

James C Briggs (Dr)

● The problem with Timeworks is with the fonts and not the printer driver. If you extend the supplied screen and printer fonts by adding the missing German characters you will find that imported First Word files will display all the German characters - any missed or misplaced characters will be displayed as a question mark. As many Calamus fonts include a full set of German characters it may be worth generating new font sets from these rather than creating all of the missing characters by hand. Fontkit Plus will do both tasks.

## Reading the Apple

**Q** Do you know of any program, which convert text files (ascii-files) from DOS or Mac environment to TOS/GEM environment?

What I mean is this: I have a diskette in DOS or 'MAC'-format (3.5"). On this DOS/'MAC' diskette there are some text files (ascii files). I want to put this DOS/'MAC'-diskette into my Atari ST drive and transfer the text files to a word processor which my Atari uses.

Do you know any programs which can do this?

John Winther

● The only way of reading Apple Macintosh disks on the ST is to buy Spectre GCR, the Apple Mac' emulator - around £350. A better approach is to format the disk to 720K MS-DOS format on the Mac - all recent Macs can do this. This disk can be read by any ST with a double-sided drive.

## Opus and GDOS

**I** The recent STA review stated that as Opus could only use a GDOS set up where each screen font was matched by an appropriate printer font, the average Timeworks set up was ruled out as was the use of Bullet or Drury Lane caps. Because of this I messed around for an age trying to get Opus to work with other font set ups. In desperation I used my Timeworks (cover disk version) font set up and added a meta.sys to it pulled from FONTG-DOS. I then ran the Assigner utility which got rid of the bullets and Drury lane caps, and finally FONTWID.PRГ to set up my OPUS.WID file. The next step was to use a text editor to add the meta.sys direction into my assign.sys file and I was up and running.

In conclusion you can use a Timeworks font set up with a little tweaking and Opus 2.2 is an excellent spreadsheet.

Craig Oldfield

## Rating PD

**A** I don't understand why PD firms don't state in their catalogues which PD programs are more reliable. Some of them are useless, they crash, they ruin important files, and they don't work. You could have a rating system, depending upon the complaints that you get. It must be bad for a "repeat business" like yours

to advertise rubbish. Could you charge more for tested disks?

There is such a vast difference between good programs like Opus and ST Writer, and Double Sentry and Neochrome and the disastrous rubbish you advertise as though it was just as good. Why don't you help yourself as well as your customers?

Forgive me for wondering whether your business depends upon catching your customers with a few programs and filling your catalogue with rubbish because that's all you've got. Or do you think the rubbish persuades your customers to buy reliable commercial programs from you?

One of the editorial staff on one of the principal ST journals told me at the telephone, contrary to his advertisements, that "PD is mostly rubbish". He ought to know. Does your image need a bit of cleaning up?

You don't need to reply. You can publish bits of it in your club journal if you want. I doubt you will want. I hope it helps.

Ron Newman

● We do our best to describe fairly all PD and shareware programs - but we cannot spend a couple of hours checking the contents of each disk on every possible permutation of TOS version, monitor resolution, etc. Concocting rating systems would involve a great deal of effort and the results would be both personal and subjective: what is the difference between a four star ram disk and a five star one? Having premium priced disks for better software is not possible as we charge only for the service of supplying the disk and not for the software; loading the premium for rating software onto the copying fee for better disks would be against the spirit and principles of PD. And many customers would use our listings to determine their needs and then order from a library that did not charge a premium.

Buying and using PD and shareware software will always be something of a lottery (for many users this is the attraction!). You do need to read the instructions, keep important files backed up, check that there are no potential incompatibilities, and at times be prepared to persevere with obscure interfaces and instructions. (You can only blame yourself if a spelling checker that makes no claim to be compatible with ST Writer makes a mess of the sole copy of one of your important ST Writer files!)

## Protar T60

**Q** Does anyone know how to start a batch file on the Protar T60 tape streamer? I have version 1.16 of the supplied software and while it will record a batch file when I try to use the execute batch file command it appears to load the file but refuses to do anything else with it!

Peter - CIX #451

**A** I only have v1.1. In this version some of the commands "record" but are not actioned (in particular filters). The following file works to backup all files on partitions D, E, F, and G:

```
OPENDRIVE D:
MARKALL
SETSTREAMER 5
COMMENT1 *Drive D all files using
COMMENT2 *
DOFILEBACKUP
CLOSEDRIVE
OPENDRIVE E:
MARKALL
SETSTREAMER 5
COMMENT1 *Drive E all files using
COMMENT2 *
DOFILEBACKUP
CLOSEDRIVE
OPENDRIVE F:
MARKALL
SETSTREAMER 5
COMMENT1 *Drive F files
COMMENT2 *
DOFILEBACKUP
CLOSEDRIVE
OPENDRIVE G:
MARKALL
SETSTREAMER 5
COMMENT1 *Drive G all files using
COMMENT2 *
DOFILEBACKUP
CLOSEDRIVE
```

I have found it quicker to write .SB files rather than use the Record facility (although I used it to find the syntax).

Roger Derry - CIX #452

## Transfile ST

Brian Tunnard - Forum STA 26

**A** I have been using the Psion Organiser II with the my STFM for over five years now. Some of the following information may be of use. In order to transfer data between the two, I use Uniterm and Psion's own Comms Link (RS232) cable. For the Psion Series 3, I believe the 3 Link is the equivalent to my Comms Link. A good source for obtaining this item, or any other Psion product, is Rovoreed (081 540 8573 - speak to Maggie Dean). IPSO (0602 735482) is an excellent source of information and programs for either the Organiser II or the Series 3. Mike O'Regan is the person to speak to.

Before starting, it is advisable to plug in the mains adaptor for the Series 3 (unless you like buying new batteries) because the link up causes the Organiser to be constantly switched on. When it comes to setting up the software I use the following set of codes for both machines: 9600 baud, Xmodem, Xon/Xoff, No Parity, 8 Databits, 1 Stopbit.

It isn't vital to use Uniterm - any other PD/commercial comms package can do the job just as efficiently. Although none of these packages will provide everything that one of Psion's tailor-made Series 3 to PC/Mac programs will, they will still provide sufficient flexibility (enough for me). Once a link has been established, it is then very easy to transfer data between the two machines. Since all my Organiser data is saved in the form of ASCII files on the ST, they can be viewed or edited.

E Y M Cheng



# DESKTOP DISCUSSIONS

*William Hern looks at a new force in computer retail and argues that Atari will have to make changes to both its marketing strategy and range of products if it is to adapt.*

## Going Shopping

It's Sunday afternoon and I'm out shopping. Around me are aisle upon aisle of goods, all packaged in eye-catching colours. A stack of wire baskets is positioned by the entrance. To my right are the checkout desks where the late afternoon shoppers are paying for their chosen items. Staff in bright uniforms stand behind counters, waiting to offer assistance with the more exotic purchases.

It may all sound like a description of a normal supermarket but I'm not out shopping for groceries. I am in fact at a computer superstore. There are now four in the London area and more are planned for other parts of the country. Computer supermarkets have been popular in the US for several years and they look set to enjoy similar success in Britain and other European countries. Open long hours seven days a week and offering a complete range of computers, peripherals, software, books and cables, it is easy to see why the American people have taken to them.

Computer supermarkets offer a compromise between the ultra-cheap mail order box shifters who provide little advice and the traditional dealer who charges a hefty premium for purchase guidance and aftersales service. Knowledgeable staff are on hand to assist customers and while you wouldn't have to look too hard through the magazines to find better prices, they're still quite low.

The only problem with these

places for you or me is that they don't stock Atari goods. While all the major PC brands and the Macintosh are usually represented, I've yet to see a single Atari related product in one. Even the Lynx (Atari's handheld machine) is absent, conspicuous by its absence from the games sections.

Computer supermarkets are a sign of the growing computer literacy within the general public. People going to these places are knowledgeable about computers and software and have a good idea of what they want. People aren't wandering in wanting 'something to do the church newsletter with', they're going in with the aim of buying a 486SX system to run PageMaker on. These are people who aren't just buying a computer for the kids, but for themselves, and for specific tasks such as word processing or spreadsheets. They are, in short, the kind of user that Atari has always been trying to attract to the ST.

The absence of Atari products from outlets such as these indicates the nature of the uphill struggle that the company will face in winning back market share with the Falcon. From being a mainstream computer in the mid to late eighties, the ST has been marginalised from above by the falling cost of business PCs and from below by the re-emergence of the games console. Will the Falcon be able to regain its predecessor's position?

The problem as any ST owner will tell you is promotion. While companies like Sega and Nintendo are promoting their new games on prime time television, Atari's advertising budget seems to barely run to a single one page magazine advert. The result is that the general public doesn't

know much about Atari's product range any more and what they don't know about, they can't ask for in computer superstores or buy from mail order firms. This situation is going to have to be tackled this year if the Falcon is to have any impact on the market at all. The public needs to be told that the Falcon is more than just a repackaged ST.

The need for promotion is just as dire for another of Atari's products, the Lynx. Here Atari have a genuine world beater. The Lynx has better graphics and sound capabilities than either its Sega or Nintendo counterparts and is currently cheaper as well. However, because of ignorance and the lack of big name game titles, people are still opting for the Gameboy or Gamegear.

Sam Tramiel has spoken several times in the last couple of months about the need for Atari to rebuild its dealer network this year. While this is an important task, it is also necessary for Atari to get their wares into the computer superstore chains. If they are to do this they will need to greatly increase advertising in order to increase recognition of the Atari brand name.

Part of the problem is the number of products in Atari's current line-up. In addition to the ST, TT and the Falcon, there are the handheld Lynx and Portfolio machines and Atari badged PC compatibles. Include the Panther console and you have a total of seven very diverse product ranges. That's a lot, especially for a company of Atari's size, to promote effectively. The company seems to acknowledge this and is dropping its PC range and the Portfolio, but that still leaves too many.

The biggest problems lie with the ST/TT/Falcon range which needs pruning. The TT specially looks out of a place now that the Falcon is out. While it is faster, it doesn't have the Falcon's DSP capabilities or TOS 4.0 or true colour. It is popular with developers though and Atari should regard the development of a 33MHz 68030 power Falcon to replace it as a priority.

The ST range also should be axed quickly. Atari must learn from the mistakes it made at the launch of the STE when it was given a premium price over the STFM. Sales of the STE were sluggish at first as buyers opted for the cheaper STFM models and as a result companies were reluctant to produce STE specific software. This cannot be allowed to happen to the Falcon and so the STE should go. The Falcon has enough competition as it is without having to fight for sales with a stablemate.

Doing all that would cut Atari's product range down to just three lines - the Falcon, Lynx and the Jaguar. That is a much more coherent lineup of systems and which have enough life in them to see Atari through most of the decade. There is also great potential for cross support, particularly for games. Atari could, for example, have simultaneous multi-format launches which is a technique that Sega has used very successfully in the last year.

In this computer literate age, where microprocessor companies buy billboard space at football grounds, brand recognition is vital. It's high time that work began on rebuilding Atari's customer image by increasing advertising and streamlining the product lines.



# P r o g r a m m e r s ' F o r u m

*In this month's edition of ST Applications' regular programming column, we make a brief foray into the complex subject of hard disk drivers, and look at basic techniques for interfacing a graphics tablet.*

## Hard disk drivers

First up this month, a letter from Andy Goodwin of Tewkesbury concerning the intricacies of hard disk drivers:

*My friend and I are designing a hardware add-on for the Atari. We have a working prototype, but I have come across a problem when it is used in conjunction with a hard disk using the ICD software. The hard disk software uses the system variable at \$516 to point to some sort of disk structure, plus a pointer at \$5A0 which it clears on reset.*

*My problem is that these variables are not documented in any of my books. The symptom is that the hard disk will boot up from a cold start, but will display the message "Can not install disk handler" on a reset, unless I clear \$516 myself. Is this a safe fix? Why does the ICD software check the structure on a reset?*

*My other hard disk is a Supra drive, and also uses \$516 and \$5A0 if booted alone. The Supra always sets up the structure at \$516 rather than checking it which guarantees that our hardware works. Can you help with any information on the structure and comments on my fix?*

Without knowing more about the nature of the hardware device, it is not possible to give a complete answer. However, a description of the functions of these two system variables should be some help. Alert readers will notice that the second of the two variables that Andy is asking about (\$05A0) is the cookie jar pointer, '\_p\_cookies'. The subject of the cookie jar has been discussed at length already in ST Applications, so further details will not be provided here. Interested readers are referred to Mathew Lodge's excellent article in STA 15.

The other variable, \$0516, is seldom men-

tioned in programming guides, and therefore merits more extensive discussion. This variable, termed 'pun\_ptr' by Atari, was introduced with the Mega ST version of the operating system; TOS 1.02. The variable contains a pointer to a structure which contains information about any hard disks attached to the system.

The format of this structure is given in the Box, which was produced using information from Atari's release notes for their AHDI hard disk driver. The structure allows programs to figure out the relationship between the logical devices used by GEMDOS (A:, B:, C: etc), and the hardware (eg, 1 floppy drive and 1 SCSI hard disk drive). To explain why this might be useful, a short digression is in order.

## The background

As an introduction to this area, consider the following scenario. Seven or so years ago, in the days before ST hard disks, a novice ST owner unwraps his shiny new computer and powers it up. He is presented by a desktop containing two drive icons (A: and B:), even though the ST only has a single internal drive. Ignoring this apparent anomaly, he eagerly starts on the impossible task of writing anything useful in ST BASIC.

Flippancy aside, the sketch illustrates an important point: there is a discrepancy between the GEMDOS *logical devices* available to the user and the physical *drives* attached to the machine. In the situation above, GEMDOS (and therefore the Desktop) thinks there are two devices, A: and B:, whereas there is only a single floppy drive. GEMDOS's idea of functional devices is controlled by the value in the system variable '\_drvbits' (\$04C2). This longword is a thirty-two bit map of device identifiers, with bit 0 corresponding to A:, bit 1 to B:

and so on. A set bit indicates that a particular device is available. By setting or resetting bits in this map, you can hide perfectly functional devices from GEMDOS or fool it into trying to use non-existent devices.

The interface between GEMDOS and the physical drive is known as the device driver. A floppy device driver is built into the ST's BIOS; any others must be loaded as separate programs. It is the BIOS floppy driver that actually knows whether there are one or two disk drives attached. This information is recorded in the system variable '\_nflops' (\$04A6, 16 bits). When GEMDOS asks for access to device B:, the BIOS is responsible for putting up the "Insert disk B: in drive A:" alert, or for accessing the second drive, if present.

In a similar way, a hard disk driver can make a single hard disk appear to GEMDOS as several logically distinct devices (usually C:, D:, E: and so on). At a low level, a hard disk is made up of thousands of uniquely numbered blocks, which are called *physical sectors*. What the device driver does is to break this large array of physical sectors up into separate areas, and give each area a separate device identifier. For example, device C: might occupy physical sectors 0 to 1999 and device D:, sectors 2000 to 3999. Each of these devices contains 2000 *logical sectors*, numbered 0 to 1999. This process is known as *partitioning*.

During its installation phase, the hard disk driver software sets the appropriate bits in \_drvbits to indicate the presence of the logical devices that it wishes to support. Later, when an access is made to one of the devices that it knows about, the driver translates the GEMDOS request, which will be couched in terms of logical sectors on a particular device, into a physical sector number that the disk controller can understand.

That's the simple part! What happens if there is more than one hard disk drive connected to an ST? One can imagine two possibilities: either each drive has its own copy of the driver software active in memory; or a single copy of the software coordinates everything. Obviously, the latter solution is the more efficient. However, it presents the driver software with an extra complication. To convert a logical device and sector specification into a hardware command, it has to keep track of which hard disk drive the desired information is on. A natural way of doing this is to have a table which translates logical device identifiers into physical drives and sectors. Just such a table forms the core of the PUN\_INFO structure.

The PUN\_INFO structure provides a way for the hard disk driver to make the relationship between logical devices and physical units available to other programs. Listing 1 contains C source code for a program that inspects the structure and associated system variables and produces a report on the drives connected to the system. Logical drives A: and B: are assumed to be floppies. If your system has an active RAMdisk program, its identifier will be reported as a logical drive, but not included on the list of links between logical and physical devices.

Unfortunately, the PUN\_INFO structure



is not fully implemented by all hard disk driver software. In particular, all versions of the otherwise flawless ICD software that I have been able to test (v5.5.0, v6.0.6), fail to exploit all the fields of the PUN\_INFO structure. The driver creates a PUN\_INFO that indicates which logical drives are connected with which physical devices, but does not fill in the physical sector fields (the partition\_start[] array is empty). If you have an Atari hard disk with a relatively recent version of the software (AHDI version 3.00 or better), the structure should be completely initialised, and the extended fields should be present.

There are other ways to obtain this missing data, as Listings 2 and 3 demonstrate. Listing 2 uses a relatively new XBIOS function, DMAread(), to directly access physical sector 0 of each hard disk drive that the PUN\_INFO structure knows about. This sector contains the *partition table* which provides the information that enables the driver software to construct the PUN\_INFO structure. Listing 2 processes this table, and fills in the gaps in the structure. To get a functional program, compile Listing 2, assemble Listing 3, and link the two object modules together using Listing 4.

The subjects of hard disk partitioning and physical sector 0 will not be explored further here, as there is enough material to fill a whole column. However, a few more words about DMAread() and Listing 3 might be useful. DMAread() and its partner DMAwrite() are XBIOS functions that were introduced in TOS v2. They allow programs to access the ACSI port without resorting to rather fiddly assembly language.

Listing 3 provides clones of these functions. The code detects whether the program is being run under a version of TOS that provides these XBIOS calls. If so, the operating system routines are used. Otherwise, the hardware is programmed directly to achieve the desired result. To allow the compiler to generate the correct function calls, the existing Lattice bindings to the XBIOS functions are removed using two #undef directives at the beginning of Listing 2.

A word of warning - be very careful with any code that directly instructs the SCSI bus. If you make a mistake, it is possible that you could lose the contents of your hard disk drive. I offer no guarantee that the functions in Listing 3 are bug-free; use them at your own risk. Having said this, my hard drive is still intact.

Returning to Andy's original question, I guess that his solution of clearing pun\_ptr before allowing the hard disk driver to run should be OK. The ICD software appears to check the PUN\_INFO structure as part of a preinstallation test for the presence of a third party hard disk driver. The installation test algorithm runs something like this:

```
if (pun_ptr != NULL && pun_ptr is not odd)
    if (longword at pun_ptr-6 !=
        0x49434442) /* ICDH */
        if (hdu_bpb handler lies within user
            memory)
            abort installation
```

Following the logic of this algorithm, clearing pun\_ptr should force the ICD software to install itself, as it does during a cold boot.

If all this discussion of hard disk drivers has inspired a desire to know more, you might like to investigate a PD program called NOAHDI. This is a complete basic hard disk driver written by Ted Schipper. The distribution archive contains fully commented source code, which makes very educational reading.

## Graphics tablets

Moving on from hard disk drives, we come to a letter from David Fright of Bishops Stortford. David has a graphics tablet that he wishes to use with his ST:

*I have a Summagraphics Tablet, stylus and puck which I occasionally use at work on a PC with Freelance. How can I use it on the ST? I know that I have to read in bytes of info from the serial port, and have managed this with Fast Basic - but then what?*

*As a programming tool, I prefer STOS with its old style language (remember the Dragon), and so if you could give me a clue for a routine, or recommend some reading, I would appreciate it.*

I can only think of two types of thing one might want to do: to work out how to use the tablet in conjunction with a custom-written program (say a drawing program), or to use it as a substitute for the mouse with commercially-written programs.

The second of these is technically rather complicated and formed the basis of the *Programmers' Forum* in ST Applications 13. I am afraid that assembly language is absolutely essential for this sort of thing, as one has to be in complete control of the way the program

## The anatomy of the PUN\_INFO structure

```
struct pun_info{
    word puns;
    byte pun[16];
    long partition_start[16];
    longword cookie;
    longword *cookie_ptr;
    word version_num;
    word max_sect_num;
    longword reserved[16];
}
```

There are two versions of the structure. The older version only implements the first three members of the structure. The newer version is that shown above.

'puns' contains the number of physical hard drives attached to the system. The 'pun' and 'partition\_start' arrays contain one element for each of the sixteen logical device (A: to P:) supported by GEMDOS. In each array, element 0 corresponds to logical device A:, element 1 to device B: and so on. In the 'pun' array, bits 0-2 of each byte give the ACSI address of the physical hard drive that implements the logical device. Bit 7 is set if the logical device is not associated with a physical hard drive (it might be non-existent, or a floppy or RAMdisk). All other bits are reserved. The 'partition\_start' array gives the physical sector number of the first logical sector of each logical device.

The next two members indicate the presence of the extended version of the structure. Only if 'cookie' is set to \$1484449 ('AHDI') and 'cookie\_ptr' points to 'cookie', is the extended structure valid. 'version\_num' is the version number of the driver software, in the format \$XXXX = version XX.YY. The 'max\_sect\_siz' field specifies the size of the largest logical sector on any logical drive. By making sector buffers as big as 'max\_sect\_siz', they are guaranteed to be large enough for all single sector read operations.

## NEXT MONTH

Next month, Programmers' Forum will print more questions and tips from readers' letters. Keep the letters coming in - the more we receive, the better the column gets! Hints on any subjects or questions about programming problems should be sent to the address below. All contributions, no matter how simple or advanced, are most welcome. Please include your address on the letter, so that I can get back to you if anything in your contribution is unclear. E-mail addresses are useful too.

Please send a disk (or email) if there are large chunks of text or ASCII source code: I have no time to retype lots of material. Naturally, disks will be returned if an SAE is included.

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works. A high-level language is inappropriate for this kind of task.

Use of the tablet within a custom-written program is quite feasible as a high-level programming project. The first thing to do is to work out how to get information from the tablet into the computer. It sounds as though David has got this under control already. The next stage is to turn the raw data into something usable. For this the tablet documentation is essential, as the program needs to know details of the format that the tablet uses to represent puck position, button presses and the like.

Armed with such a specification, it should be fairly easy to produce some code to write the current puck position into a pair of variables (X and Y, say). If a cursor is to be displayed on the screen, the resolution of the tablet must be matched to that of the screen.

Some clever tablets can be told to do this themselves: the programmer sends a series of codes (a little like printer escape codes) to the tablet telling it that the resolution is to be 640 horizontally by 400 vertically (for the ST high res mode).

If the tablet does not support this, the conversion can be done in software. The code might look something like:

```
LET XRATIO=SCREENWIDTH/TABLEWIDTH
LET YRATIO=SCREENHEIGHT/TABLEHEIGHT
```

```
LET SX=X*XRATIO
LET SY=Y*YRATIO
```

Following this, one could go on to write some code like that in Listing 5 (excuse the poor BASIC, I'm very rusty!). Users wishing to convert this into some kind of simple drawing pro-

gram using some of the line-drawing techniques illustrated in STA 26.

## Portability considerations

There's nothing particularly unusual in this month's listings, so porting the software on to non-Lattice compiler systems should be easy. However, close attention should be paid to the interface between the C and assembler functions in Listings 2 and 3. Do check the order and size of the arguments for the DMAread() and DMAwrite() functions - the consequences of a careless mistake here could be unpleasant. Read your compiler manual thoroughly!

Listing 5 is written in some notional dialect of BASIC, cobbled together from dim and distant memories of Applesoft BASIC and Spectrum BASIC. Keen BASIC programmers will know what to do to make it work.

### Listing 1

```
*****

/*
** Listing 1.
** Programmers' Forum STA 28 (April 1993)
**
** Program to decode the hard disk pun_info
** structure and associated system variables.
**
** Compiler system: Lattice C v5.52
** Compile options: -cargfku
** Meaning: Enable ANSI mode, disable trigraphs, enable
** non-ANSI keywords, assume unsigned chars
** Link with C.O and LC.LIB
** Written on 31st January 1993
*/

#include <osbind.h>
#include <stdio.h>

/*
** Define useful symbols...
*/

#define FALSE 0
#define TRUE 1

#define AHDI_MAGIC 0x41484449

#define _nflops 0x04A6
#define _drvbits 0x04C2
#define pun_ptr 0x0516

/*
** Define the low level types - alter these
** as required for your compiler system.
*/

typedef unsigned char byte; /* Unsigned 8 bit quantity */
typedef unsigned short word; /* Unsigned 16 bit quantity */
typedef unsigned long longword; /* Unsigned 32 bit quantity */

/*
** Define the pun_info structure and
** symbols.
*/

#define MAXUNITS 16

typedef struct {
    word puns; /* Number of physical hard drives */
    byte pun[MAXUNITS]; /* Lookup table for logical drives */
    long partition_start[MAXUNITS]; /* Logical unit offset */
    long cookie; /* Extended pun_info flag */
    long *cookie_ptr; /* Pointer to the cookie flag */
    word version_num; /* Version of driver */
    word max_sect_siz; /* Size of largest logical sector */
    long reserved[16];
} PUN_INFO;

/*
** Declare the functions...
*/
```

```
int main(int, char **, char **);
PUN_INFO *get_pun_info(void);
void decode_pun_info(PUN_INFO *);
void print_drive_map(PUN_INFO *);

/*
** Declare the global variables...
*/

word floppies;
longword devices;

/*
** The program starts here...
*/

int main(argc, argv, envp)

int argc;
char **argv, **envp;

{
    PUN_INFO *pptr;

    printf("\033E\n \033pPUN_INFO decoder\033q\n");
    printf("Written on 31st January 1993\n\n");
    pptr = get_pun_info();
    if (pptr == NULL)
        printf("No PUN_INFO structure initialised !\n\n");
    else
        decode_pun_info(pptr);
    printf("Press RETURN to exit:");
    getchar();
    return(0);
}

/*
** Function to obtain a pointer to the PUN_INFO
** structure. Supervisor mode is used to read the
** pointer value out of 'pun_ptr' ($0516). The
** function returns the structure address.
**
** Usage: ptr = get_pun_info();
**
** PUN_INFO *ptr, *get_pun_info(void);
*/

PUN_INFO *get_pun_info(void)

{
    void *oldSSP;
    PUN_INFO *ptr;

    oldSSP = Super(NULL);
    ptr = *(PUN_INFO **)pun_ptr;
    floppies = *(word *)_nflops;
    devices = *(longword *)_drvbits;
    Super(oldSSP);
    return(ptr);
}

/*
** Function to actually make sense of the PUN_INFO
** structure, by printing out a report on its contents.
```



```

** The argument is a pointer to the structure. There
** are no returns.
**
** Usage:  decode_pun_info(ptr);
**
**         void decode_pun_info(PUN_INFO *);
**
*/

void decode_pun_info(ptr)

PUN_INFO *ptr;

{
    printf("PUN_INFO structure located at:  %08X\n",ptr);
    printf("Number of hard drives attached:  %d\n",ptr->puns);
    printf("Number of floppy drives attached: %d\n",floppies);
    if (ptr->cookie == AHDI_MAGIC && ptr->cookie_ptr == &(ptr->cookie))
    {
        printf("Extended PUN_INFO data:\t\t ");
        printf("Driver version: %x.%02.2x\n", (ptr->version_num >> 8),
              (ptr->version_num & 0xFF));
        printf("\t\t\t\t Largest logical sector: %u bytes\n",
              ptr->max_sect_siz);
    }
    putchar('\n');
    print_drive_map(ptr);
    putchar('\n');
}

/*
** Function to decode the logical/physical drive
** mapping contained within the pun_info structure.
** The argument is a pointer to the structure. There
** are no returns.
**
** Usage:  print_drive_map(ptr);
**
**         void print_drive_map(PUN_INFO *);
**
*/

void print_drive_map(ptr)

PUN_INFO *ptr;

{
    int f;
    word done_first;
    longword bitmap;

    bitmap = 1;
    done_first = FALSE;
    printf("Logical devices: ");
    for (f=0; f<MAXUNITS; bitmap<<=1,f++)
        if (bitmap & devices)
        {
            if (done_first == TRUE)
                putchar(',');
            putchar('A'+f);
            done_first = TRUE;
        }

    printf("\n\nFloppy drives:  ");
    done_first = FALSE;
    for (f=0; f<floppies; f++)
    {
        if (done_first == TRUE)
            putchar(',');
        putchar('A'+f);
        done_first = TRUE;
    }

    printf("\n\nHard drives:\n");
    for (f=0; f<MAXUNITS; f++)
        if (!(ptr->pun[f] & 0x80))
            printf(" Device %c starts at physical sector %u of ACSII device %d\n",
                  f+'A',ptr->partition_start[f],ptr->pun[f] & 0x07);
}

Listing 2
=====

/*
** Listing 2.
** Programmers' Forum STA 28 (April 1993)
**
** Program to fill the bits of the PUN_INFO
** structure that the ICD software does not.
**
** Compiler system: Lattice C v5.52
** Compile options: -cargfku
** Meaning: Enable ANSI mode, disable trigraphs, enable
**          non-ANSI keywords, assume unsigned chars
** Link With C.O and LC.LIB
** Written on 31st January 1993
**
*/

```

```

#include <osbind.h>
#include <stdio.h>

#undef DMAread
#undef DMAwrite

/*
** Define useful symbols...
*/

#define FALSE      0
#define TRUE       1

#define pun_ptr    0x0516

/*
** Define the low level types - alter these
** as required for your compiler system.
*/

typedef unsigned char byte;      /* Unsigned 8 bit quantity */
typedef unsigned short word;     /* Unsigned 16 bit quantity */
typedef unsigned long longword;  /* Unsigned 32 bit quantity */

/*
** Define the pun_info structure and
** symbols.
*/

#define MAXUNITS    16

typedef struct {
    word puns;          /* Number of physical hard drives */
    byte pun[MAXUNITS]; /* Lookup table for logical drives */
    long partition_start[MAXUNITS]; /* Logical unit offset */
    long cookie;        /* Extended pun_info flag */
    long *cookie_ptr;   /* Pointer to the cookie flag */
    word version_num;   /* Version of driver */
    word max_sect_siz;  /* Size of largest logical sector */
    long reserved[16];
} PUN_INFO;

/*
** Declare the functions...
*/

int main(int,char **,char **);
PUN_INFO *get_pun_info(void);
void fill_pun_info(PUN_INFO *);

int DMAread(long,int,void *,int);
int DMAwrite(long,int,void *,int);

word buffer[4096];

/*
** The program starts here...
*/

int main(argc,argv,envp)

int argc;
char **argv, **envp;

{
    PUN_INFO *pptr;

    printf("\033E\n \033pPUN_INFO structure filler\033q\n");
    printf("Written on 2nd February 1993\n\n");
    pptr = get_pun_info();
    if (pptr == NULL)
        printf("No PUN_INFO structure initialised !\n\n");
    else
        fill_pun_info(pptr);
    printf("Press RETURN to exit:");
    getchar();
    return(0);
}

/*
** Function to obtain a pointer to the PUN_INFO
** structure. Supervisor mode is used to read the
** pointer value out of 'pun_ptr' ($0516). The
** function returns the structure address.
**
** Usage:  ptr = get_pun_info();
**
**         PUN_INFO *ptr, *get_pun_info(void);
**
*/

PUN_INFO *get_pun_info(void)

```



```

{
    void *oldSSP;
    PUN_INFO *ptr;

    oldSSP = Super(NULL);
    ptr = *(PUN_INFO **)pun_ptr;
    Super(oldSSP);
    return(ptr);
}

/*
** Function to actually make sense of the PUN_INFO
** structure, by printing out a report on its contents.
** The argument is a pointer to the structure. There
** are no returns.
**
** Usage: fill_pun_info(ptr);
**
** void fill_pun_info(PUN_INFO *);
**
*/

void fill_pun_info(ptr)
PUN_INFO *ptr;

{
    int f, last_id, counter, ACSI_id, offset, done_any;
    char *start;

    printf("PUN_INFO structure located at: %08X\n", ptr);
    printf("Number of hard drives attached: %d\n", ptr->puns);
    last_id = 0xFFFF;
    counter = 0;
    done_any = FALSE;
    for (f=0; f<MAXUNITS; f++)
        if (!(ptr->pun[f] & 0x80) && ptr->partition_start[f] == 0)
        {
            done_any = TRUE;
            ACSI_id = ptr->pun[f] & 0x07;
            if (ACSI_id != last_id)
            {
                DMAread(0,1,buffer,ACSI_id);
                counter = 0;
                last_id = ACSI_id;
            }
            else counter++;
            if (counter > 3)
            {
                printf("Simple-minded program cannot process > 4 partitions\n");
                continue;
            }
            offset = 12 * counter + 0x01CA;
            start = (char *)buffer + offset;
            printf("Logging logical drive %c: on ACSI device %d partition %d at\n",
                f+'A', ACSI_id, counter, *(longword *)start);
            ptr->partition_start[f] = *(longword *)start;
        }
        if (done_any == FALSE)
            printf("\nPUN_INFO structure already filled in !\n\n");
    }
}
    
```

### Listing 3

```

*****
**
** Listing 3.
** Programmers' Forum STA 28 (April 1993)
**
** Module containing assembly language functions
** to emulate the TOS 2.x and later XBIOS functions
** DMAread and DMAwrite. There are three functions
** designed to be called from C according to the
** Lattice C v5.5 interface using default long
** integer mode (ie do NOT link this with modules
** compiled under -w). The basic ACSI communications
** techniques are derived from material in the
** Abacus 'Atari ST Disk Drives: Inside and Out' book.
**
** WARNING: Inappropriate use of DMAwrite can trash your
** hard disk - use these functions at your own
** risk.
**
** Assembler system: Lattice asm v5.52
** Assemble options:
** Written on 3rd February 1993
**
    
```

CSECT TEXT,0

```

**
** Declare some useful symbols...
**
    
```

```

GEMDOS          equ    1
Super           equ    $20

XBIOS           equ    14
DMAread         equ    $2A
DMAwrite        equ    $2B

flock           equ    $043E
_hz_200         equ    $04BA
_sysbase        equ    $04F2

fdc_access      equ    $FFFF8604 16 bits
dma_mode        equ    $FFFF8606 16 bits
dma_basis_high  equ    $FFFF8609 8 bits
dma_basis_mid   equ    $FFFF860B 8 bits
dma_basis_low   equ    $FFFF860D 8 bits

HDC_Read        equ    $08
HDC_Write       equ    $0A
    
```

```

**
** Declare the exported objects.
**
    
```

XDEF DMAread, DMAwrite

```

;=====
**
    
```

```

** Function to read sectors directly from the
** hard disc controller into a buffer. The function
** is a functional clone of the TOS 2.x DMAread()
** function. The arguments are the physical sector
** number of the first sector to be read; the
** number of sectors to read; a pointer to a buffer of
** sufficient size to contain the data; and the device
** number of the ACSI controller to be read from. The
** function returns 0 if all is OK, or an error code.
**
** Usage: result = DMAread(sector,count,buffer,device);
**
** int result, DMAread(long,int,void *,int);
**
    
```

```

_DMAread move.l a2,-(sp)      Save this across the function.
        clr.l  -(sp)          Transfer into supervisor mode.
        move.w #Super,-(sp)
        trap   #GEMDOS
        addq.l #6,sp
        move.l d0,old_SSP     Save the old supervisor stack.
        move.l _sysbase.w,a0   Fetch address of ROM header.
        cmp.b  #1,2(a0)       TOS v2 or better ?
        ble.s  1$             Must use our code if not.
        move.l sp,a0           Take a copy of the stack pointer.
        move.w 22(a0),-(sp)    Refer the call to the XBIOS.
        move.l 16(a0),-(sp)    Stack ACSI code number, buffer,
        move.w 14(a0),-(sp)    sector count,
        move.l 8(a0),-(sp)     first sector number,
        move.w #DMAread,-(sp)  and function code.
        trap   #XBIOS          Do it.
        lea    14(sp),sp
        bra.s  end_fn          Return code in d0 already.

1$       lea    16(sp),a2       Address the buffer pointer.
        bsr    set_HDC         Set up to talk to HDC.
        move.l 20(sp),d0        Fetch the ACSI address number.
        and.w  #7,d0           Restrict range to 0-7.
        lsl.w  #5,d0           Shift to form correct SCSI command.
        or.w   #HDC_Read,d0    Copy in command to 'Read Sector'
        bsr    send_HDC        Write this out to the HDC.
        bne.s  timeout         Quit on timeout error.
        move.b 9(sp),d0        Write out the starting sector number
        bsr.s  send_HDC        in the order high,mid,low.
        bne.s  timeout
        move.b 10(sp),d0
        bsr.s  send_HDC
        bne.s  timeout
        move.b 11(sp),d0
        bsr.s  send_HDC
        bne.s  timeout
        move.l 12(sp),d0       Send the sector count to the HDC.
        bsr.s  send_HDC
        bne.s  timeout

        move.w #S090,2(a0)     Rattle the DMA: read/write/read
        move.w #S190,2(a0)
        move.w #S090,2(a0)
        move.w 14(sp),a0       Send the sector count to the DMA.
        move.w #S08A,2(a0)     Return to talking to HDC.
        move.l #S000,a0        Start read transfer: byte 6 = 0.
        move.l #400,d0         Time this operation out in 2s.
        bsr.s  HDC_wait
        move.w #S08A,2(a0)     Select the HDC in read mode.
    
```



; This section is common to reading and writing.

```

end_comms move.w    (a0),d0      Fetch the status and strip off the
    and.w          #$FFF,d0      useless bits.
timeout  move.w     #$080,2(a0)   Now select the FDC for the system.
    clr.w          flock(a1)      Release the floppy VBL.
    ext.l          d0            Return code: 0=no error, ~0=error.
end_fn   move.l     d0,value       Save the return value.
    move.l         old_SSP,-(sp)   Back to user mode for the C code.
    move.w         #Super,-(sp)
    trap           #GEMDOS
    addq.l         #6,sp
    move.l         (sp)+,a2        Replace a2 now.
    move.l         value,d0       Recover the return code.
    rts

```

```

**
** Subroutine to write d0.b out to the
** HDC using a timeout of 50ms. It assumes
** that the system is already configured to
** talk to the HDC. The entry point HDC_wait
** allows the user to wait for d0.l blocks of
** of 5ms for an already sent HDC command to
** finish.

```

```

** Inputs:      d0.b = byte to send to HDC.
**              a0 -> fdc_access
**              a1 -> $00000000
**              Supervisor mode and IPL 3
** Outputs:     d0.l = 0 if all OK, -1 on any error
**              EQ if all OK, NE,MI on any error
** Destroys:    d0.l

```

```

send_HDC swap      d0            Move the byte into the high word,
    move.w         #$08A,d0      to make room for the FIFO control.
    move.l         d0,(a0)       Write the stuff out.
    moveq          #10,d0        Wait for 50ms.
HDC_wait add.l     _hz_200(a1),d0 Calculate the target value.
1$      btst.b     #5,$73FD(a0)  Check HDC interrupt: finished yet ?
    beq.s          2$            Quit if so, all OK.
    cmp.l          _hz_200(a1),d0 Time out ?
    bcc.s          1$            Loop if not.
    moveq          #-1,d0        Signal timeout error (also MI,NE).
    rts
2$      clr.l      d0            Signal all OK (also EQ).
    rts

```

```

;=====
**
** Function to write sectors directly out from a
** buffer to the hard disc controller. The function
** is a functional clone of the TOS 2.x DMAwrite()
** function. The arguments are the physical sector
** number of the first sector to be written to; the
** number of sectors to write; a pointer to a buffer of
** containing the data to be written; and the device
** number of the SCSI controller to use. The function
** returns 0 if all is OK, or an error code.
**
** Usage: result = DMAwrite(sector,count,buffer,device);
**
**      int result, DMAwrite(long,int,void *,int);

```

```

_DMAwrite move.l    a2,-(sp)      Save this across the function.
    clr.l          -(sp)         Transfer into supervisor mode.
    move.w         #Super,-(sp)
    trap           #GEMDOS
    addq.l         #6,sp
    move.l         d0,old_SSP     Save the old supervisor stack.
    move.l         _sysbase.w,a0  Fetch address of ROM header.
    cmp.b          #1,2(a0)       TOS v2 or better ?
    ble.s          1$            Must use our code if not.
    move.l         sp,a0          Take a copy of the stack pointer.
    move.w         22(a0),-(sp)   Refer the call to the XBIOS.
    move.l         16(a0),-(sp)   Stack SCSI code number, buffer,
    move.w         14(a0),-(sp)   sector count,
    move.l         8(a0),-(sp)    first sector number,
    move.w         #DMAwrite,-(sp) and function code.
    trap           #XBIOS         Do it.
    lea            14(sp),sp
    bra.s          end_fn         Return code in d0 already.
1$      lea         16(sp),a2      Address the buffer pointer.
    bsr.s          set_HDC        Set up to talk to HDC.
    move.l         20(sp),d0      Fetch the SCSI address number.
    and.w          #7,d0          Restrict range to 0-7.
    lsl.w          #5,d0          Shift to form correct SCSI command.
    or.w           #HDC_Write,d0 Copy in command to 'Write Sector'
    bsr.s          send_HDC       Write this out to the HDC.
    bne            timeout        Quit on timeout error.
    move.b         9(sp),d0       Write out the starting sector number
    bsr            send_HDC       in the order high,mid,low.

```

```

bne        timeout
move.b     10(sp),d0
bsr        send_HDC
bne        timeout
move.b     11(sp),d0
bsr        send_HDC
bne        timeout
move.l     12(sp),d0      Send the sector count to the HDC.
bsr        send_HDC
bne        timeout

```

```

move.w     #$090,2(a0)    Rattle the DMA: read/write
move.w     #$190,2(a0)
move.w     14(sp),a0      Send the sector count to the DMA.
move.w     #18A,2(a0)     Return to talking to HDC.
move.l     #100,(a0)      Start write transfer: byte 6 = 0.
move.l     #400,d0        Time this operation out in 2s.
bsr        HDC_wait
move.w     #18A,2(a0)     Select the HDC in write mode.
bra        end_comms

```

```

**
** Subroutine to set up the system for either
** a hard disk read or write. The 68000 is
** put into supervisor mode, the DMA is set
** and the HDC readied to receive a command.

```

```

** Inputs:      a2 -> Address of buffer.
** Outputs:     a0 -> fdc_access
**              a1 = 0
**              ** SUPERVISOR MODE **
** Destroys:    d0/a0/a1

```

```

set_HDC lea        fdc_access,a0 Point to the disk control register.
    sub.l         a1,a1          Make 0 pointer for fast accesses.
    st            flock(a1)      Lock out the floppy VBL.
    move.l        _hz_200(a1),d0 Fetch the current 200Hz timer value.
    addq.l        #2,d0          Wait for 10ms.
1$      cmp.l      _hz_200(a1),d0 Time up yet ?
    bcc.s         1$            Carry on waiting if not.
    move.b        3(a2),9(a0)    Write in dma_basis_low...
    move.b        2(a2),7(a0)    ...dma_basis_mid...
    move.b        1(a2),5(a0)    ...and finally dma_basis_high
    move.w        #088,2(a0)     Talk to HDC: Al low, ready for cmd.
    rts

```

```

;=====
**
** Internal data area.

```

```

old_SSP dc.l      0
value   dc.l      0

```

END

Listing 4  
=====

```

addsym
from
    G:C.O
    G:FILLPUN.O
    G:HDC.O
library
    G:LC.LIB
to
    FILLPUN.TOS

```

Listing 5  
=====

```

10 REM **
20 REM ** Listing 5.
30 REM ** Programmers' Forum STA 28 (April 1993)
40 REM **
50 REM ** Simple sketch of program that could be
60 REM ** uses to display a tablet cursor on the
70 REM ** ST screen. The subroutine at line 1000
80 REM ** should scale the tablet resolution as
90 REM ** described in the text.
100 REM **
110 LET OLDX=-1: LET OLDY=-1
120 GOSUB 1000: REM Get the puck position into SX and SY
130 IF SX=OLDX AND SY=OLDY GOTO 70
140 GOSUB 2000: REM Erase cursor at OLDX,OLDY
150 GOSUB 3000: REM Draw cursor at SX,SY
160 LET OLDX=SX: LET OLDY=SY
170 IF INKEY$<>CHR$(27) GOTO 120: REM Exit when ESCAPE pressed

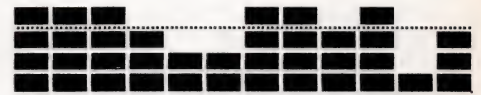
```



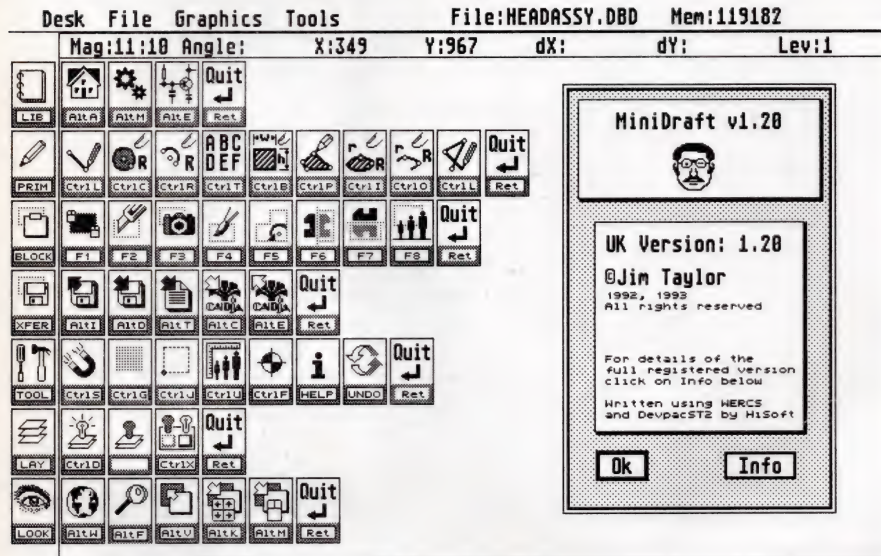
# CAD Column

To complement the review of *tbxCAD* and enable easy comparison with other available Atari CAD packages, Joe Connor scores *TBXCAD* following the format established for the *CAD Supertest* in *STA Issue 14*.

## tbxCAD v2.1



1 2 3 4 5 6 7 8 9 10 11 12



The CAD Column has been following the progress of MiniDraft closely which is just as well because the author, Jim Taylor, seems to be implementing features on a daily basis. The latest version includes Mac style pop-out icon menus and keyboard shortcuts for nearly every function. The last function selected replaces the default icon at the left-hand edge of the screen. An enhanced hard-copy dialog enables a user-defined width and height for scaled output in millimetres. Jim is considering adding full floating point maths and extended vector font support, using either Postscript or Calamus format. It all depends on the response from users. Currently if you send Jim a MinDraft drawing of

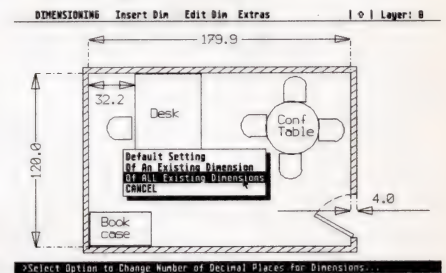
any vector font he will convert it for use in MiniDraft. If there is enough interest a font editor may be included in later versions. So, now is a good time to get involved with the best Shareware CAD package around. The PD version is available from the ST Club on disk DRG.55, or direct from Jim Taylor at:

**12 West Drive, Cleadon, Sunderland, Tyne & Wear, SR6 7SJ.**

Write to me with your CAD related hardware or software problems at:

**65 Mill Road, Colchester, Essex, CO4 5LJ.**

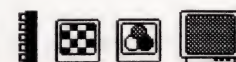
- 1) Draw: an excellent range of line, circle and arc commands, complemented by Bezier curves, ellipses and elliptical arcs.
- 2) Edit: the basic line, circle and arc break and trim commands are very effective. Bezier curves, ellipses and line/penstyles cannot be edited.
- 3) Dimension: intuitive range of commands enhanced by powerful editing options, some not found in any other Atari package.



- 4) Layer: Up to 254 layers but the layer management tools are cumbersome and incomplete.
- 5) Symbol: None included. Symbols can be loaded and saved, as blocks. Blocks can be manipulated like other drawing elements but only after placing them on the screen.
- 6) File: loads native .TBX format and saves .TBX and GEM Metafiles. Unfortunately the GEM Metafiles are distorted in the vertical axis.
- 7) View: the tbx drawing screen is infinite in each direction, limited only by available memory. Features such as dynamic screen panning, selective display of text, dimensions and cross-hatching together with the usual zoom options provide excellent control over the displayed view.
- 8) User Interface: well organised hierarchical menu system, featuring context sensitive posting of drop down menus and 'magic' tbx pop-up menus. Excellent prompt line displays the next expected action at all times.
- 9) Text handling: basic functions to position text on screen. Draft and final quality vector fonts are included which can be displayed upright or italicised. A basic font editor is also provided.
- 10) Cursor position: a powerful range of 'specks' short for specific locations appears in a separate drop down menu. Snap grids, relative and absolute co-ordinate entry are also provided.
- 11) Customisation: nothing provided, no details of compatible utilities provided.
- 12) Manual: the 55 page, wide A5 manual includes a useful 16 page tutorial followed by the command reference section.



Gemview V2.01 is an excellent shareware utility (ST Club disk GRA.158) enabling a wide range of colour and monochrome graphic file formats to be manipulated, loaded, displayed, converted and saved. Colour images can be converted using a variety of dither patterns or as a halftone image. Apart from the file formats shown in the screenshot Gemview will also load Macpaint, .PCX, STAD, Neochrome, Art Director, Spectrum, Windows BMP and many others.



53%



## For Sale

TT030 8 MB, 44MB HD, Colour Monitor, External Floppy, Matrix Graphic Card, £500 Software, total £1400. Didot Pro CD, Colour DTP £250, Protar 44MB Removable Cartridges Drive, Incl 2 Carts £390. Epson GT600 Colour A4 Flatbed Scanner £500, Titan Reflex Graphic Card for STE upto 1024 x 1024 Res £130. Phone Keith on 0204-306279. (29)

Atari 520 STFM with 4 games of your choice £150. Many more games to sell separately. Tel 021-358-2843. (28)

Atari TT. TOS 3.06 2MB ST Ram GE-Soft RAM board with 4 MB of TT RAM - Can be expanded upto 32MB! £950 (2 months old) Steinberg DX/TX Synthworks Editor for ST all original Dongle, Manual + Disks £50, Rombo ST/STE Video Digitizer + RGB Splitter worth £200 new, will sell for £75! Call Peter on 081 539 9729. (29)

For Sale following defection to the PC! 1040 STFM with Naksha mouse £150, Philips CM8833 II Colour Monitor £120, Power 900 20MB Hard disk £50, Power combined 3.5" and 5.25" floppy drive £25, Golden Image Scanner £50, Supercharger PC Emulator £35. Phone Kevin 081859-1614. (29)

Microvitec 1441 Colour Monitor, with Mono Sound, can be set up for TTL or Analogue Video Signal.

# Classified Adverts

Classified adverts are free to subscribers.

Please use the form on page 58.

Copy of full workshop manual included. Lead for STFM. Perfect working order. Best offer secures. Phone 0865 62060. (Oxford) you can leave a message. (28)

Hisoft C Interpreter; Minix V 1.5, Xtra Ram populated to 2MB. Offers for any item please! John Connor, Daytime phone: 061-330 6911 x 2230. Evening 061-330-6883. (29)

Lattice C V5, Boxed with full manuals. £50. Ring Andrew (0788) 811995. (29)

Mega ST2, Blitter, TOS 1.4, Auto-Switch Overscan (Registered version), Gives 40% more Screen on SM144 Monitor. Expansion Bus etc. Excellent Condition £250 (Excl. carriage) Boxed. Also SM144 Monitor £75 (Excl. car-

riage). Bargain £300 the lot. Tel: (0333) 429835 after 6.00pm and ask for Jim. (29)

Supra 45 Meg Hard drive, Hisoft Power Basic, Devpacst, Wercs. Personal Finance Manager, 3D Spreadsheet. £145. Tel: 0455-230186. (28)

Steinberg Pro 24, Dongle Key, £30 ono: Sequencer One Plus £20 ono: PC Ditto £8, Games: Orig. Night Breed, Time Machine, Asterix £4 each or £10 all three, American STAR 2400 Baud Modem, Viscom P.C. software, needs attention £15 ono, Monitor Switch Box, new unopened £6. All Software boxed with manuals. Phone Jon 0323 500910. (29)

Canon BJ-300 Ink Jet Printer absolutely as new in original pack-

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Power Slimline 40Mb Hard Drive with ICD Utilities. Fast and Reliable £170. Mega STE 50Mb Hard Drive with Atari Host Adapter and Atari Utility Software £115. - Graham Curtis (Derby) 832829. (29)

Atari 520 STFM, TOS 1.4, 1MB Ram 1 MB Internal AND External drives, Games and other software: £185. Atari SM124 Monitor £70, Star LC24-200 24 Pin Printer with ribbons and paper: - £150. Phone 0264 738446 after 5.30pm any day. Buyer collects. (29)

Megapaint II mono drawing package - £45, Quick ST 3 - £10, Flair Paint - £10, manual for Harlekin 1 (As seen on cover disks) - £5, Wordflair 1 - £25. Call Frank on (0279) 434168 (Home) or (0438) 782551 (work). (28)

Mark Williams C Compiler £25, Hisoft C Interpreter £10, K Resource 2 £10, First Word Plus V3.14 £25, Timeworks Desktop Publisher £25, ST Basic Revised Edition £5, Borodino £6, Sub Logic Flight Simulator II with Scenery disks 7, 11 and 14 - £30, C Breeze (C Editor) £8, Fun School 2 Ages 6-8 - £10, Over 8 - £10. Phone (0344) 885609 (Ascot, Berkshire). (28)

Casio FZ sample disks: huge libr-

## Authorware

If you would like to see your software featured in the ST Applications Authorware column please send us a review copy of the software and a rough outline of the advertising copy you would like to be printed.

### Morse Master

The complete morse trainer and simulator, with realistic 'on-air' emulator and integral editor, with complete control of your listening equipment. In addition to sending, your Atari can also receive and decode morse from your own key using the supplied interface cable. Usable by novices and professional radio operators alike. Send Cheque/PO for £29.99 payable to Bosead Ltd at: 16 Aytoun Grove, Balbridgeburn, Dunfermline, Fife, KY12 9TA. Telephone (0383) 729584 evenings for technical information.

### Pulser

A low-resolution programme which cycles the colours as you draw ... and keeps them moving. Create stunning graphics with movements. Every cir-

cle, line, square, ray etc can PULSE in any direction, all on the screen at the same time. £7.50 inclusive or £2.50 (refundable on upgrade) Demo 1 double sided or 2 single sided disks (state which). David J Fright, 113 Waytemore Road, Bishops Stortford, Herts.

### STEN

ST ENthusiasts disk magazine - for your copy send a disk + SAE to: Dave Mooney, 14 School Road, Morning-side, Newmains, Lanarkshire.

### SynTax

The ST adventure magazine on disk! Reviews, solutions, hints, special features and much, much more. Runs in colour only. Produced bi-monthly. SynTax costs £3.50 an issue, £20 for a year's subscription. Cheques made payable to S. Medley should be sent

to: 9 Warwick Road, Sidecup, DA14 6LJ.

### Kitchen Design Program

Create kitchen plans, and elevation views to scale from a wide selection of units and appliances with worktops, pelmets, etc. High resolution mono only. Lawrence Elliott, 42 Gwaun Coed, Brackla, Bridgend, Mid Glamorgan CF31 2HS.

### Clip Art

Clip Art specifically for Christian and Community Magazines. Seven disks of IMG images for DTP programs supplied with a printed picture catalogue of every image. Cost: £3 per disk plus P&P: total of £23 for the set. Cheques payable to: Peter Kempley, KemCom Designs, 21 Chart House Road, Ash Vale, Aldershot, GU12 5LS.

### Calamus Manual

This self-tutorial guide incorporating sections on frame drawing, entering text, changing fonts and styles, importing text and images, drawing boxes and lines, loading, saving, printing, text rulers, headers and footers and page numbers. Available at £5 (including postage) from: David Waller, The Sandon School, Molram's lane, Great Bad-dow, Chelmsford, Essex, CM2 7AQ.

Cheques should be made out to 'Sandon School'.

### Genealogy

Newgen, my genealogy program, runs on any ST(E) or TT and is easy to use; it will print family trees, etc. Send large SAE for details or £17 for program. E G Richards, 2 Peckarmans Wood, London SE26 6RX.

### Educational Adventures

For ages 5-13. 88% in ST Format. £12 each. 50p per disk for demo's. CVS, 18 Nelson Close, Teignmouth, TQ13 9NH. Tel: (0626) 779695.

### RAE Morse Test

Selectable letter/number groups, thinking time, note pitch, morse generation from keyboard for CQ; plus save to disk, etc. Instruction manual and disk and SAE for more details. R. L. Tuft, 62 Admirals Court, Thirsk, North Yorks, YO7 1RR. Telephone: 0845-525082.

### Sonix Sound Sampling

We will sample your sounds from tape to disk. Ideal for demos, games and your own programs. 3-day turnaround guaranteed. Write for free details to: The Lodge, Dolly End, Hailey, Witney, Oxon, OX8 5XD.



any of quality sounds. Also sound-patches for most major synths (M1, D110, SY77, K4, etc.); swaps or sale. Sample CD's wanted. Ring for details: Andy, 0532 430177. (28)

ST original software: Daley Thompson, Rocket Ranger, K.O.2 - Winning Tactics, North and South, only £3 each. Hard Drivin'2, Killing Cloud, European Space Sim, Damocles only £5 each. Space 1889, F29 Retaliator, Flight of Intruder £8 each. Trimbase (relational database) £10. Phone John 0742 748794. (28)

Atari 1040 STF, 720K Internal Drive, 720K External Drive, SM125 Mono Monitor, PC Speed PC Emulator, lots (50Mb +) of PD Software - £320. Degas Elite £5, Easytext + (9 Pin Printer) £5, Leisure Suit Larry

£5, Balance of Power £5, Mark Williams C £25, C Debugger £5, Abacus and other Programming Books £5 each: Scotland 0786 825406. (28)

That's Write V1.5 £35, Easy Draw V2 £20: Phone Ken (0708) 723956. (29)

Atari 520 ST With 1/2Meg External Drive £55. (not boxed) Various Software including: (Timeworks) Swiftcalc, (Ataris) Hyperdraw, Hyperpaint, (Futuresoft) Jackpot 2, (Kumas) K Graph 3: Phone with offers if interested 031 334 1114. (29)

Atari ST Games: Nightmare £9.00, Azure Bonds £5.00, Tower or Babel £5.00. Many other games available, prices from £1.00: Fred, Darlington 0772 51737. (28)

Mega 1 ST £199, Vortex 40 Mg

Hard Disc with Cache £199, Atari SM 124 Monitor £59, Star NL10 Printer £29. All items un-marked and in Perfect Condition. Word Processors/Spreadsheets/Data Base £12 each. Equinox Small Business Accounts £25, GFA Basic Interpreter V2 inc Glentop GFA Basic £10: Tel. 0422-204199 any-time. (28)

Lattice C V5 - Offers? Hisoft C Interpreter, Knife ST, Axelen Mouse, Books - ST Internals, Gem Prog. Reference, Peel, Basic-to-C. Offers invited! - Jeff (0992) 574973. (28)

Orla DMK7 Professional Master Keyboard 3 Split Points, 2 Midi Outs Store up to 128 Presets - 5 months old, boxed as new with manual £220, Yamaha PSS-780 5 Octave Keyboard Mid-in-out-through Digital Synth 100 Rhythms 100 Voices + manual £80. Both - Carr ex. Phone Seon 041-959-7466. Seon Smyth, 20 Talbot Drive, Glasgow G13 3RR. (28)

Philips CM8852 Colour Monitor + Lead for Atari. Perfect Condition Only £75. Buyer collects. 0730 816602 Evenings, Weekends. Also NEC P6 Plus Printer £120. (From

Parsons, Sunflowers, School Lane, Stedham, West Sussex. GU29 0NZ. (29)

PageStream v2.1, Unregistered & Unused, a bargain at £80.00. Selling because of acute cash-flow crisis, therefore no offers. Contact: John Weller, 49 Haylett Gardens, Surbiton Crescent, Kingston, Surrey. KT1 2ER. Tel: (081) 546 0993. (28)

Casio FZ Sample Disks - Huge Library of quality sounds - also Sound Patches for most major Synths, with ST loaders. Sale or swap - Ring for details: 1/4 meg Simms (4 of). One Pair Upgrades A 520 STE to 1 Meg. Only £5.00 each. Ring Andy - 0532-430177. (30)

Breaking 520 STFM due to damaged main PCB. Sold complete or individually. Reasonable offers for: Internal Power Supply, Disk Drive, Keyboard (with mouse/JS Sockets), Casing, IC's, Processors etc. Write: K.C.V. 97 Lincoln Road, Fratton, Portsmouth, Hants. PO1 5BQ. (28)

Atari 1040STFM with 2.5mb RAM - SIMMS to 4mb easy, Mono Moni-

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This new book gives both an overview of the operation of Signum and illuminates some of the more difficult areas of the Signum manual. Useful for newcomers and experienced users alike.

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Dr. Graham McMaster, Retsum Computing Solutions, 7 Murray Terrace, Alford, Aberdeenshire AB33 8PY.

## CIRCUIT DESIGNER

Create good quality circuit diagrams quickly and easily. Comes with laser printed manual. Works with any ST or STe computer with monochrome monitors. Costs only £7.00: Send Orders to:

Darren P. Goodwin, 4 Coniston Drive, Bolton on Dearne, Rotherham, S. Yorkshire S63 8NE.

## "A Practical Guide to Write On"

For the beginner and advanced user alike. Written by a practising teacher. Includes worked examples and Quick Reference Section, as well as a Guide Start pull-out. Partly covers That's Write 1.52 as well. Price £5 inc. p&p.

Order from:

*Terry Freedman, The William de Ferrers School, Trinity Square, South Woodham Ferrers, Essex CM3 5JU.*

Cheques payable to "The William de Ferrers School (ECC)" please.

## CRITICAL MASS

### VirusTOOL 2.0

VirusTOOL provides facilities for virus removal, detection and prevention. For regular virus detection an AutoKill option is provided; this monitors the disks for viruses and prompts for deletion if they are not safe 'Antiviruses'. Also provided is a simple bootsector editor and virus/antivirus libraries. VirusTOOL can work as both an application and an accessory.

### FileTOOL v1.1

FileTOOL is both a file manipulation accessory and a replacement file selector. FileTOOL v1.1 offers: Multiple file copying, moving, deleting and printing. Drive selection and file renaming. Easy to use unique double file selector format.

To receive further details about the above SHAREWARE software for the Atari ST range, please send an SAE or £1.50 for a copy on disk. To receive information about (and often copies of) new software and upgrades, why not register with Critical Mass for only £5.00?

Critical Mass Concepts, The Fishergate Centre, 4 Fishergate, YORK YO1 4AB



tor, 85mb SCSI Hard disk, Second DS Floppy, New Mouse, HP Deskjet Plus, Golden Image Hand Scanner, VIDI-ST Digitizer, Joystick, Pagestream 2, Touch-up, Neodesk 3, Pascal, and C. Ten Games, Mono-Colour Switchbox, Loads of Magazines and disks. Selling to buy Mac. £750 or serious offer considered. Tim Allen: - Dartford. 03220275755. (28)

Amstrad SM2400 Autodial Auto-answer 2400 Baud Modem. Manual and Lead included. Good Condition, £60. Tel. (0709) 895707. (29)

Pagestream 2.2 £80, First Word Plus, Hisoft C, Superbase Personal £15 each, Introduction to Word Processing, Basic Programming & Programming Utilities £10 each, P.C.Ditto, Flair Paint £10 each, ST/Amiga Format 2-13, ST Format 1-20,23,26,34-38,40. ST Club Newsletters 15-31, ST Applications 1-4, 9, 14-24, ST User 42 issues March 88 -Present + other ST Mags. 92 Cover Disks in Total, Offers. Phone 0626 654645, Alan. (30)

KSP Read 2 with Manual, Macro Mouse, Professional Icon Designer, Mavis Beacon Teaches Typing. £30.00 ono. Tel Graeme on 09603 69686. (28)

ST Manuals: Calligrapher, Thunder Writer's Assistant, Cashbook Controller, Flair Paint, Hyperpaint, ST Base, Publishing Partner, Atari ST Basic. All £5 each. Phone 031-229-4566. (28)

Vidi-ST Digitiser, Deluxe Paint, Quantum Paint, GFA Raytrace, TripATron, Canvas, STOS Compiler, Virus Killer - boxed + mags/2 games £85/£70 buyer collects. Steve 081-960-0776 (after 4).

Portfolio 32K Memory Card, Parallel Interface, File Transfer Software & Lead for ST to Portfolio. All £20 each. Serial Data Switch Box £5, Guide to Timeworks Book £5. Phone 081-851 5942. (29)

## SCANNER MANAGER

A specialised database system for all scanner owners, this software has been designed to be very easy and quick to use. Some of the features in the current software are: ability to store up to 20,000 channels/frequencies, up to 1000 channels held in memory for instant access, very fast searching and sorting of frequencies.

For further details contact: Stuart Coates. 9 Links Road, Kibworth Beauchamp, Leicester LE8 0LD.

## Wanted

40Mb H.D. Visual Sample Editing Software to suit Mirage. Phone Jon 0323 500910. (29)

Cannon Bji0e Printer Driver for Calamus. Phone (0257) 252875 evenings James. (30)

Has anyone got Imagic collecting dust in their collection and would like cash for it. Phone Ron on 051 264 7347. (29)

GFA - Basic Software Development Book & Disk - 0834 871514. (29)

Hard Drive (Pref 80 Mb or more) Mega ST/E & PC Emulator. May purchase separately at reasonable price. Phone Paul on 0268 774089 (Essex) after 2pm please. (29)

Calamus 1.09N wanted. Tel Graeme on 09603 69686. (28)

AutoRoute programme for Atari ST. Offers to Cyril Maskery, 6 Parkside, Belper, Derbyshire. DE56 1HY. (0773) 822 832. (28)

Portfolio and 128K Epsom urgently needed. Call Keith Cowling. 05242 62043. (28)

Reprostudio (with or without Scanner) or Megapaint. Tel Leeds - 665388. (28)

## General

3.5" Disks bought and sold. Atari STE bits for sale. Any general Atari queries answered. Phone Ian 0695 579106. (28)

My Little Phoney BBS (0793) 849044 - all speeds up to V32bis and HST. Specialist Atari ST BBS, carrying all Atari-related fidonet and Nest Echoes, and importing international ST file echoes (AFN/ADN). High speed and technically aware callers are especially welcome! (R)

Crystal Tower BBS 01-886-2813 24hrs 300-2400 Baud (Towernet System) Atari ST, PC, Languages, Comms etc + much more. All welcome. (R)

Guide Dogs for the Blind Appeal - Please send used postage stamps to help this worthy cause to: 19 Dunloy Gardens, Newton Abbey, Co. Antrim, BT37 9HZ. (R)

STARGATE BBS: 0476-74616 V21 V22 V22BIS V23 Atari ST section; also PC, Amiga and Comms areas. Comms help and advice for ST and PC via ST Editor. Give it a call and leave a message. If you need comms software get Uniterm from the ST Club. (R)

Professional typeset from 1st Word disks. Over 100 Faces. Output to high quality PMT. Much better than laser. Also cheap printing A5/A4 single colour. Contact: AZTRAL Games, PO Box 8, Lowestoft, Suffolk, NR32 2AS. (R)

**Games to Sell: Badlands (Boxed unopened) £15, other games unboxed. All for £10: Supremacy, Hunter Corporation, Super Space Invaders, Batman, Ghost-Busters 11, Robocop. Following games £5: Rock Star, Ate My Hampster, Passing Shot, Crackdown, APB, Night Raider, Janghier Khan's Squash. Enquiries ring after 5pm on 0270- 257182. All offers considered. (29)**

The Confederation BBS - Support bbs for all "HITCHHIKER" software releases and GFA programmers. All the latest PD/Shareware from Europe and USA as well as Netmail message areas. On line each evening 10.00pm to 7.00a.m., at all speeds up to 2400. Give us a call today and you will not be disappointed as we are the most friendly BBS in the country - dedicated ST BBS only. 0533 413443.

Help the Hungry in Africa. Please give your support to those facing drought, hunger and ruin. You can help by sending any old coins, stamps or used stamps to - OXFAM TRADING, Stamp & Coin unit, Murdock Road, Bicester, Oxon, OX6 7RF. (37)

'Alternatives fanzine - Quarterly. £1 per issue. Issue 9 out now (Autumn), Issue 10 out soon. Send £1 (which includes p+p) and address to Alternatives, 39 Balfour Court, Station Road, Harpenden, Herts, AL5 4XT. Writers,

visionaries, artists needed. Details to the above address.

## Help

I have a Protar 100 DC Series II Hard Drive (System Software 4.1.2) and a 1040 STF. The drive Formats OK, but attempting to copy a large file from floppy to the drive results in 3, 4 or 11 bombs. Turbodos helps - I can copy files of up to around 50K. The conflict must be with TOS 1.2. Can any one help? Protar and Cambridge Business Software don't answer my letters. Contact me on Internet Emeli c/o Panther & Carla Dist.Unige.It, or write to Clyde Meli, 36 Ta'xbiex Terrace, Ta'Xbiex, Malta.

Does anyone have any information on A4 flat bed scanners (greyscale or colour) suitable for use with the ST? I would appreciate make, model details, your views on accompanying software, etc. Also interested in hand-held colour scanners. Write to J. Lucas, 37 Horndean Avenue, Wigston, Leics, LE18 1DP. (27)

Does anyone know how to make 'Mug Shot' (Wizworks) work on a 520 STFM? Also, has anyone got the English Instructions for 'Theme Park Mystery' (Mirrorsoft). Please Contact Mr. G. Ruth, 31 Lander Road, Litherland, Liverpool L32 8HJ. (28)

## Contacts

ST Contacts wanted, interested in music, graphics, assembler, TeX, or just general weirdness. I have a 2.5M STM with colour and mono monitors. Write to Oliver Broadway, Elk Towers, 4 Cadogan Gardens, London N3 2HN. (28)

DTP/Graphics Contacts Wanted - Phone Pete on 021-476 9201 after 6pm. (28)

Does any user of CIRCUIT V2.5 (TRANSISTOR 2) by David Potter written in GFA Basic 2 and dated 18th May 1992 have a contact address for him. Also any users interested in swapping circuits or ideas please write to: Lui, 15 Falcon Road West GFL, Edinburgh. EH10 4AD. (28)

## STTRACK


Use up to four light beams with your ST. Measure speed and acceleration. Write data to disk for spreadsheet. Invaluable for science National Curriculum AT4. High resolution only. Software and manual with full details £20. Cheques payable to:

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STA28

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## PD & Shareware disk prices

Up to 6: £1.45 each    6+ Disks: £1.25 each  
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## Accessories

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10 - £5.00

50 - £22.50

## Banded Disks

**Guaranteed 3.5" DS disks**  
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Box of 10 - £9.95

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Coloured Labels - 1.5p each  
500 Sprocket Fed White Labels - £9.50

10 Sprocket Fed White Labels - £9.50

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Slimpack box for 12 disks - £ 1.40  
Box for 40 disks - £ 5.95  
Box for 80 disks - £ 7.45  
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Box for 40 disks - £ 5.95

Box for 80 disks - £ 7.45

Posso stackable file for 150 - £22.95

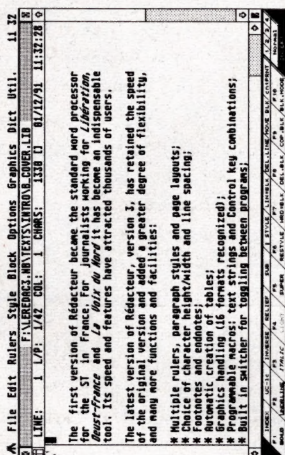
**Classified Advertisement Copy**

Please insert the following advert for ..... Issues under the following classification: / ST Contacts / For Sale / Wanted / General / User Groups. Adverts are free to ST Applications subscribers.

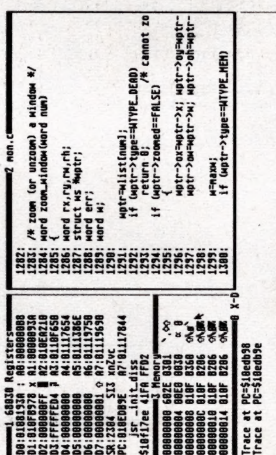
This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Warning: It is illegal to sell unauthorised copies of commercial software - All software offered for sale must be in the original packaging with manuals etc. Anyone found to be selling pirated software through the classified advert listings will be reported to the appropriate authorities. Software publishers do not normally offer user support or upgrades to users of software purchased second hand.

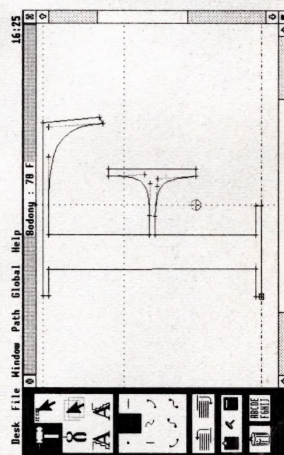
# ST Club Product News



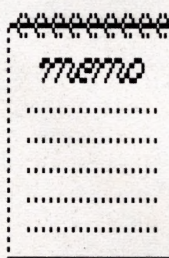
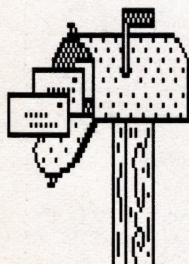
## Redacteur Junior - £39



# X-Debug - £24.95



**Fonty - £11.95**



Use this space for any feedback you'd like us to read.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



# Ladbroke Computing



33 Ormskirk Rd,  
Preston, Lancs,  
PR1 2QP

Ladbroke Computing International are one of the longest established home computer dealers in the UK. We have developed an extensive customer service policy which involves testing of all Hardware prior to despatch to ensure that goods arrive in working order, offering free advice and support over the phone and keeping customers informed. Although our prices are not always the cheapest we do endeavour to offer consistently good service and backup.

All prices are correct at copy date 05/02/93 (while stocks last), and are subject to change without prior notice. All prices include VAT but exclude delivery.

## How to Pay

You can order by mail Cheques/Postal orders made payable to Ladbroke Computing. Or give your credit card details over the phone.

## Delivery

Postal delivery is available on small items under £40 (Normally £3, phone for details). Add £7 for courier delivery. Next working day delivery on Mainland UK subject to stock (£11 for Saturday delivery).

Open Mon-Sat 9.30am to 5.00pm.  
Ladbroke Computing Ltd Trading As  
Ladbroke Computing International.

Fax: (0772) 561071

Tel: 9 am - 5.30 pm (5 Lines)

(0772)203166

# DataPulse

## Hard Drives

- All Data-Pulse Plus Drives are formatted, partitioned and tested before despatch.
- Autoboosting and Autoparking. Extremely low noise.
- DMA device selector & On/Off switch on front of case, DMA Out port.
- Full metal case measuring 300mm x 285mm x 51mm (wdh), providing good shielding and monitor stand.
- We only use quality ICD controllers with clock.
- All drives include 12 months warranty & free expert support.

Data-Pulse + 42Mb	£ 319.99
Data-Pulse + 85Mb	£ 379.99
Data-Pulse + 127Mb	£ 429.99

## Floptical Drives

- Stores over 20Mb of data on a 3.5" Floptical disk. Reads/Writes 720K and 1.44Mb 3.5" disks.
- Average access time 65ms, Data transfer rate 200K per second (6 times faster than Floppy disk).
- Available as a stand alone unit, an upgrade to Data-Pulse(Plus) or as a combination unit with Hard drives. 21Mb Floptical diskette included with every drive.

21Mb Floptical Drive	£ 399.99
Datapulse upgrade	£ 299.99
21Mb 3.5" Floptical Disk	£ 24.99

## STE Packs

520 STE Discovery Xtra	£219
1Mb STE	£229
2Mb STE	£275
4Mb STE	£329
1040STE Curriculum 2	£289

## Falcon 030

- 16MHz 32 bit 68030 Central Processor, 16MHz Blitter.
- 32 MHz 56001 Digital Signal Processor.
- 1.44Mb 3.5" Floppy, up to 14Mb RAM.
- Displays 65536 colours from 262144 palette at 768 x 480 resolution.
- 8 Channel, 16 bit, higher than CD quality, stereo sound sampling.
- Multi TOS MultiTasking Operating System.

FALCON 1Mb No HD	£ 479
FALCON 4Mb 65Mb HD	£ 879

## Budget Hard drives

Limited Offer Bargain basement hard drives based on a GEsoft controller and 42Mb Quantum Mechanism. The Hard drive has no on board clock and is not compatible with an Atari Laser but will daisy chain to any existing Data-Pulse Plus drive. This is an ideal low cost introduction to Hard Drives.

42Mb Budget Drive	£249.99
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## Printers

### Star

Star LC100 Colour	£ 165
Star LC20	£ 124
Star LC24/100	£ 179
Star LC24/200 colour	£ 259

All Star Dot Matrix printers include 12 months on site warranty.

Starjet SJ48 Bubblejet	£ 210
SJ48 Sheetfeeder	£ 69

### Citizen

Citizen 120D+	£ 119
Citizen Swift 240 Colour	£ 270

### Hewlett Packard

HP Deskjet 500	£ 339
HP Deskjet 500 Colour	£ 449
HP Deskjet 550 Colour	£ 580

### Triumph Adler

JPR7825 Bubblejet	£ 224
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### Lasers

Seikosha OP104	£ 549
Seikosha 1Mb RAM	£ 69
Seikosha Toner (2 units)	£ 19
Seikosha Drum Unit	£ 79
Ricoh LP1200	£ 759

Add £3 for Centronics cable and £5 for next working day courier delivery.

## Monitors

Atari SC1435	£ 179.99
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The SC1435 comes complete with cable and tilt/swivel stand.

Philips 8833MKII	£ 229.99
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Includes 12 months on site warranty and free Lotus Turbo challenge II.

Philips 15" FST Tv	£ 229.99
Philips 15" Cube Teletext	£ 259.99

• SCART input Tv	
• Fastext teletext	
8833 MKII-ST cable	£ 9.99
Philips SCART to ST	£ 9.99

## ST Networks

### Datanet Network Hardware

- Cartridge based high speed network solution.
- Compatible with ST(F)(M), Mega ST, STE, Mega STE.
- Connects via Coax and BNC connectors.

### Powernet Network Software

- MultiTasking Network software allows applications to run on the server while drive and printer accesses take place in the background.
- Allows the mixing of Network types, ie DataNet, LanNet and MidiNet devices.
- Full Falcon compatibility using LanNet device.
- Ethernet compatibility and E-Mail coming soon.

DataNet with PowerNet	£ 99.99
LanNet with PowerNet	£ 89.99
MidiNet with PowerNet	£ 59.99

## Aries Upgrades

- Will fit any ST(F)(M) or Mega ST. Solder in design for higher reliability.
- Extremely compact in house designed Multi-Layer circuit board, smaller than a credit card. Upgradeable in stages from the base 512K to 2Mb then 4Mb.
- All Aries RAM upgrade boards come packaged in a 10 capacity disk box, complete with full fitting instructions and memory test software.

512K Board	£ 39.99
2Mb Board	£ 79.99
4Mb Board	£ 129.99
512K SIMM's STE	£ 9.99
2Mb SIMM's STE	£ 49.99
4Mb SIMM's	£ 99.99
2xSIPP to SIMM adaptors	£ 3.00

## Repair Services

Our Service department can repair ST's in minimum time at competitive rates. We can arrange for fully insured, courier pickup and return delivery of your machine to ensure it's safety. We even have a same day service which will ensure your machine is given priority and subject to fault, completed the same day. We can fit memory upgrades, PC Emulators, Security devices, ROM upgrades, hard drives to Mega STE's etc.

We offer a Quotation service for £15 for which we will examine your machine and report back with an exact price for repair. If you do not wish to go ahead with the repairs then just pay the £15. However if you do go ahead then the charge is included in the minimum charge.

Please note: The minimum charge covers labour, any extra parts are chargeable.

Quotation	£ 15.00
Minimum repair charge	£ 35.25
Same day service	£ 15.00
STF(M) PSU	£ 39.99
1Mb Internal drive	£ 39.99
TOS 2.06 + Switch STF(M)	£ 65.00
TOS 2.06 + Switch STE	£ 65.00
Courier Pickup	£ 11.00
Courier return	£ 7.00

## GI Brush Mouse

# "The Natural way to draw"

- 240Dpi resolution.
- Opto/Mechanical mechanism.
- 500mm/SEC tracking speed.
- Switchable between ST/Amiga.
- Direct Mouse replacement.

GI Brush Mouse £ 19.99

## Mice

Golden Image Mouse £ 14.99

The Golden Image Mouse was recently given an Amiga Format Gold Award with 90% and offers 290 Dpi resolution, 2 high quality microswitched buttons and a free mouse mat.

Optical Mouse £ 24.99

The Golden Image Optical Mouse is a high quality, 3 button, replacement mouse. The fully Optical mechanism means no moving parts offering far higher reliability. Includes Mat.

Jin Mouse £ 7.99

Don't be deceived by the low price of this mouse. Mass production of the Jin mouse has resulted in a high quality Opto/Mechanical mouse featuring 290 Dpi resolution.

Ladbroke's Mouse mat £ 2.98

Please add £2 for P&P on mice.

## Floppy Drives

- 720K formatted capacity.
- Double sided, Double density.
- Daisy Chain Through port for compatibility with older ST(M) machines.
- External Power Supply.
- Attractive case design.

GI External drive £ 54.99

ST Internal drive £ 44.99

## Hand Scanners

- 100,200,300,400 Dpi resolutions.
- 1 letter mode, 3 photo modes.
- 105mm scanning head.
- Includes the excellent MIGRAPH TOUCH UP 1.8. This is the full package with manual.
- Includes DELUXE PAINT ST, full package with animation and manual. One of the best available art packages for the ST.
- MIGRAPH's OCR Package available as an Upgrade to all Golden Image Scanner Owners.

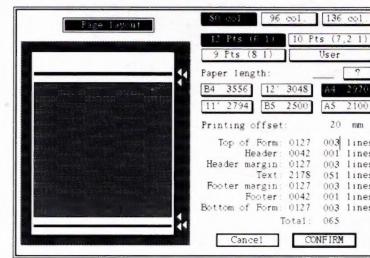
Golden Image Scanner £ 119.99

## Silhouette

- Autotraces bit image graphics to resolution independant vector graphics.
- Produces Beziers, B-Splines, High resolution grey scales.
- Imports IMG, DEGAS, TINY, MacPaint, GEM, SGF files.
- Exports IMG, GEM(1.3), SGF, DXF, EPS(Postscript) files.
- Requires 1Mb ST, Hi-res monitor.

Silhouette £ 60  
Calamus CVG support coming soon.





StyleTypeFace 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 8001

THIS \$ only CANCEL CURRENT : ChapHead X Request: ChapHead

[illegible]

Runs on any Atari ST(E), Mega ST(E), or TT with at least one megabyte of memory.